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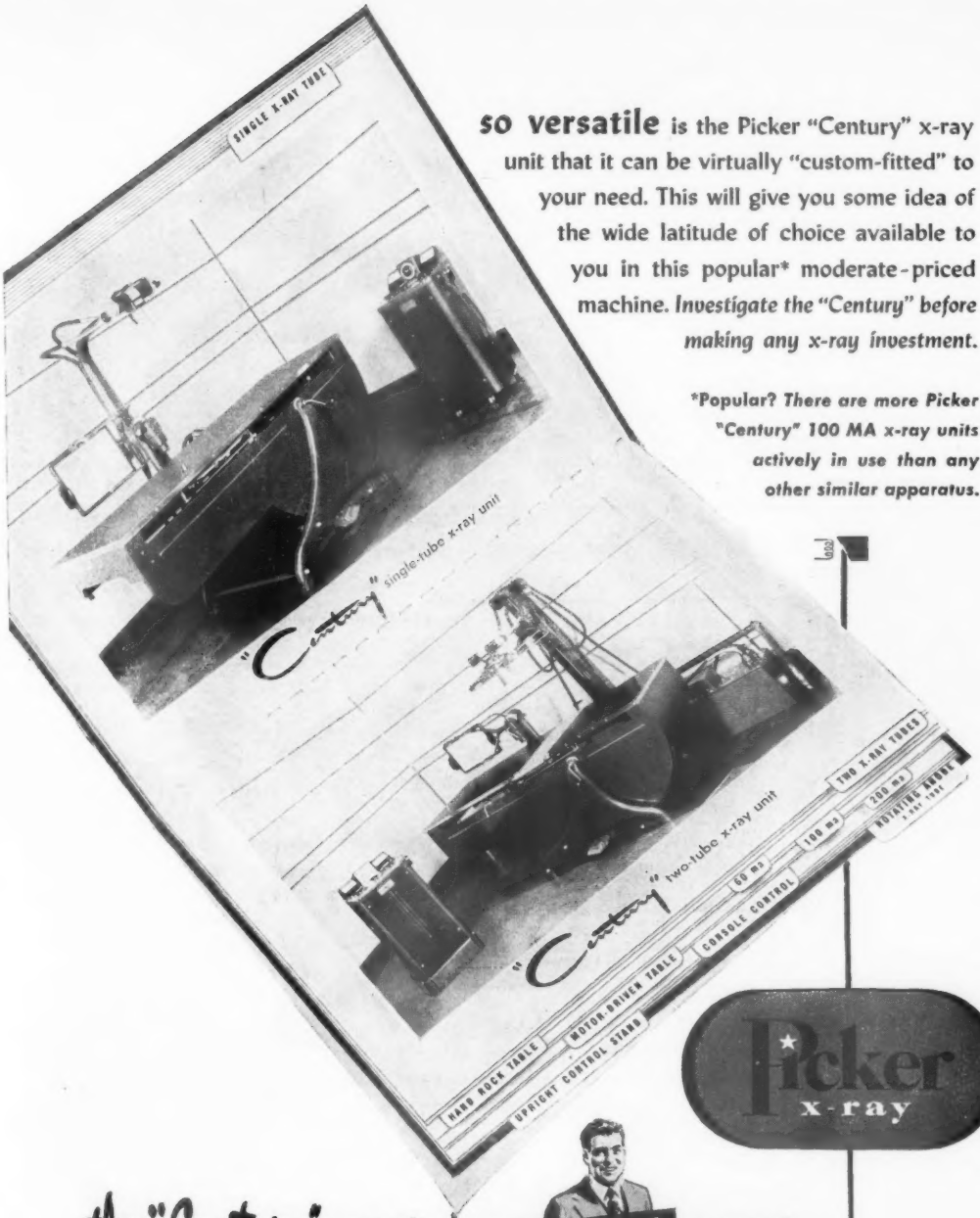

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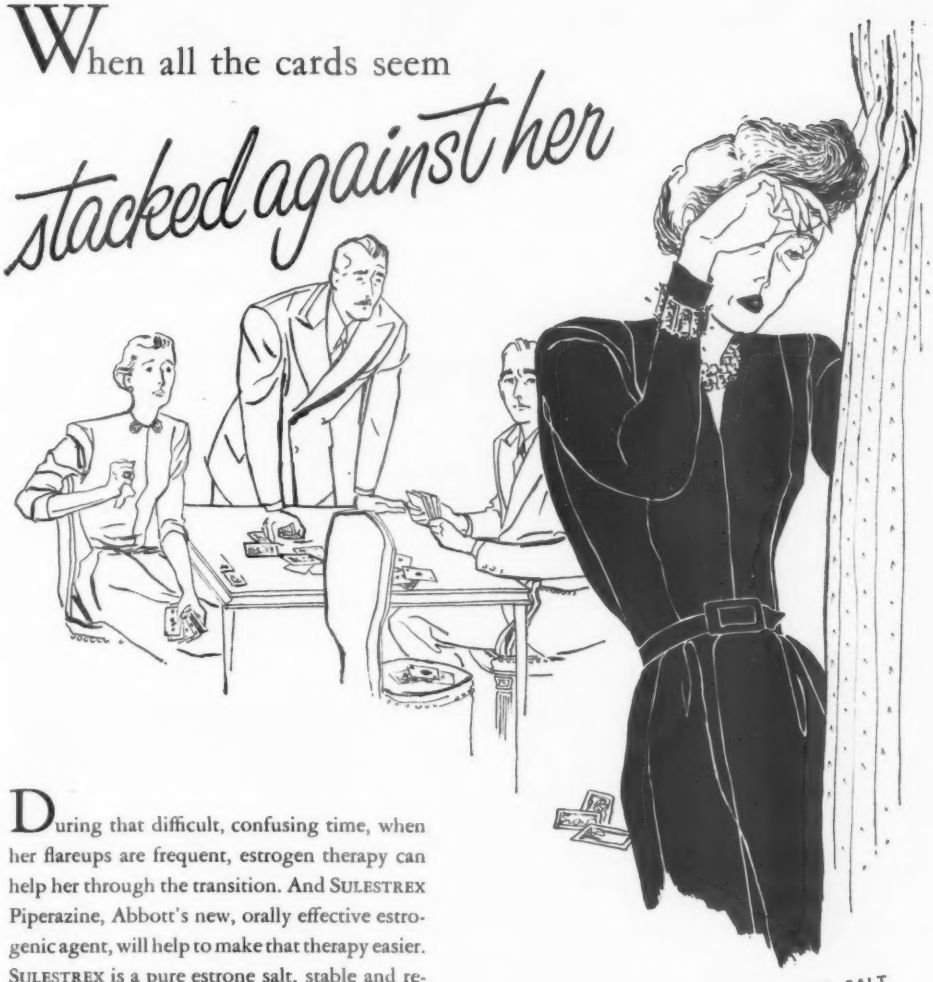

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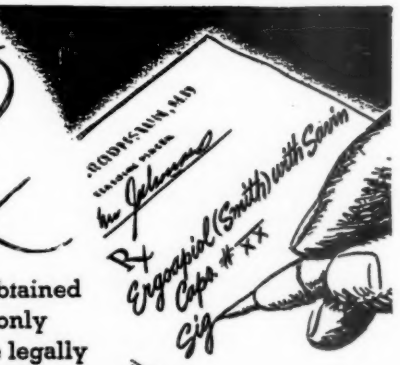

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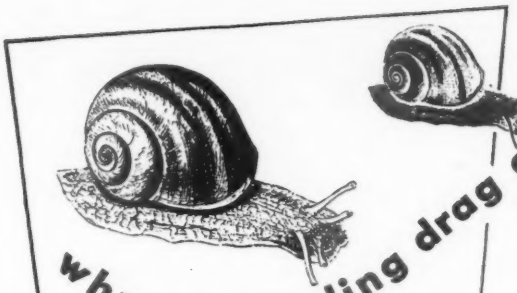

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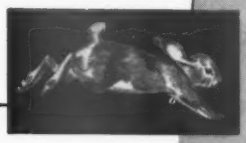

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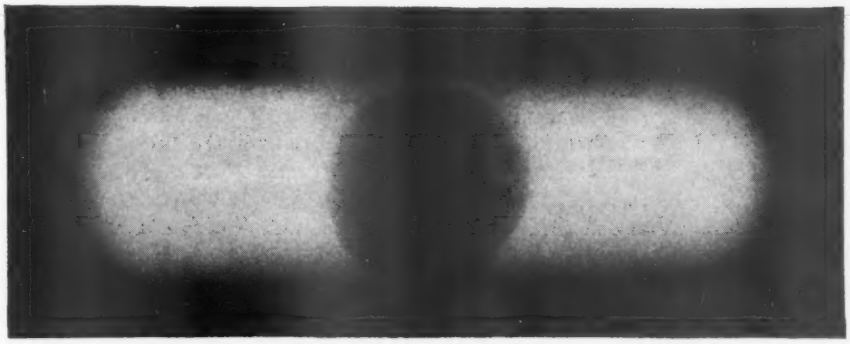

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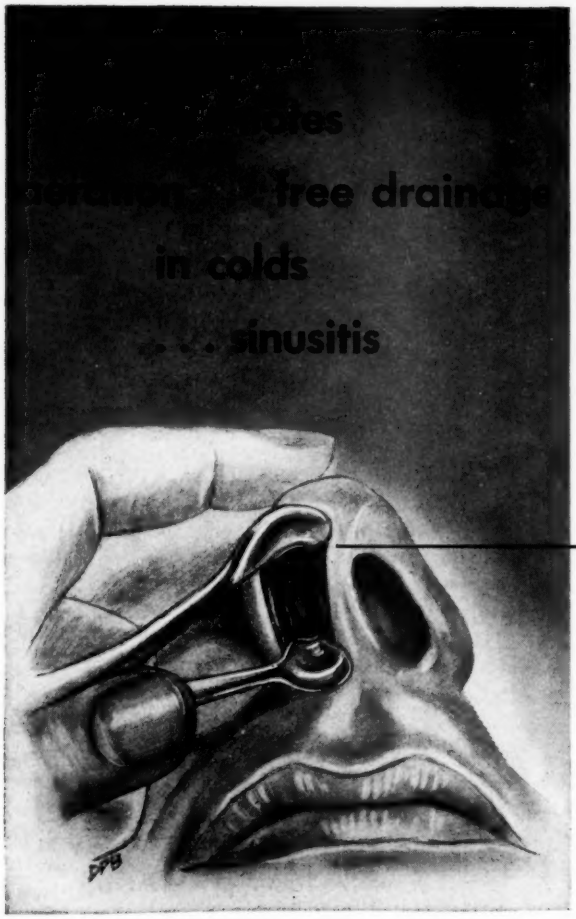
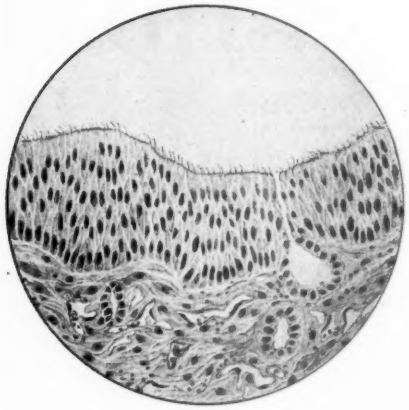


Nasal membrane showing increased leukocytes with denudation of cilia.

Normal appearing nasal epithelium.



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*Eastman, N. J. & Seibels, R. E.: *The Efficacy of the Suppository and of Jelly Alone as Contraceptive Agents*, J. A. M. A. **139**:16 (Jan. 1) 1949.

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Journal of the
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VOLUME 5 NOVEMBER, 1950 NUMBER 11

Supplementary Nutritive Values between the Proteins of Some Common Foods

Harriette Chick, D.B.E., D.Sc. (Lond.)

THE CONCEPTION that the proteins contained in different foods differ greatly in nutritive value is of comparatively recent origin. Until the end of the last century investigators in the field of nutrition recognized the importance in diet of sufficient amounts of proximate principles: carbohydrates, fats, minerals, and proteins. The protein was, however, just protein and represented merely the nitrogenous element in the food. The realization that different foods contained proteins possessed of different nutritive or "biological" values was derived largely from the efforts of Max Rubner in Berlin, and his then assistant, Karl Thomas. By means of nitrogen balance tests upon himself, Thomas (1909) showed the differing capacity of proteins in different foods to replace the daily nitrogen expenditure of the body due to wear and tear of the tissues. The more important of the proteins thus tested were placed by Thomas in the following series of descending values: beef, milk, fish, rice, potatoes, oats, peas, white meat, flour, maize. With one or two exceptions this order has been confirmed by subsequent investigators.

A method of estimating nutritive value of proteins by the ability to support growth in young rats was developed by Osborne and Mendel (1919). Owing to its omnivorous habit and rapid rate of growth, the rat has proved a convenient animal for this type of investigation. The different proteins to be compared are incorporated in the same proportion as sole source of nitrogen in similarly composed diets and the ratio $\frac{\text{Gm. wt. increase}}{\text{Gm. protein eaten}}$, known as the "protein efficiency ratio" (P.E.R.), has proved to be a useful measure of the nutritive value of the protein tested (Osborne, Mendel, and Ferry, 1919).

As knowledge of the chemistry of proteins has advanced and methods for estimation of their constituent amino acids have been evolved, a third and important method has been provided for study of the nutritive value of proteins.

By the labours chiefly of Rose (1938) and his colleagues, a series of 10 to 11 "essential amino acids" has become recognized, this series being modified according to the species, nutritional state, and age of the animal. These essential amino acids, while necessary for the correct nitrogenous nutrition of the mammalian organism and the building of its constituent proteins, cannot be synthesised by the animal itself from other amino acids or nitrogenous compounds, but must be provided in the food in the ready-made condition. The results of analysis of any given protein for its content of essential amino acids, if such were trustworthy, would thus offer material for an estimate of its nutritive value.

All three methods for judging the nutritive value of proteins have advantages and disadvantages, and all have been subjected to criticism (Chick, 1947). However, as has been pointed out by Block and Mitchell (1946) in their critical

Dr. Chick is a member of the Scientific Staff of the Lister Institute of Preventive Medicine, London, and a Fellow of University College, London.

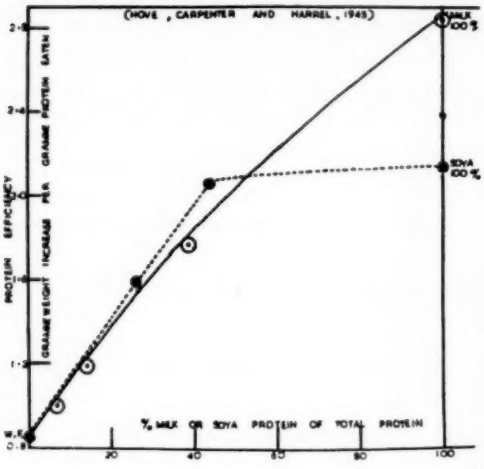
(HOVE, CARPENTER AND HARREL, 1945)
PROTEIN EFFICIENCY
GRAMME WEIGHT INCREASE PER GRAMME PROTEIN EATEN
% MILK OR SOYA PROTEIN OF TOTAL PROTEIN
MILK 100 %
SOYA 100 %

Fig. 1

Fig. 1 Supplementary value of the proteins of milk and soya for the proteins of white wheat flour. (Adapted from Hove, Carpenter, and Harrel, 1945.)

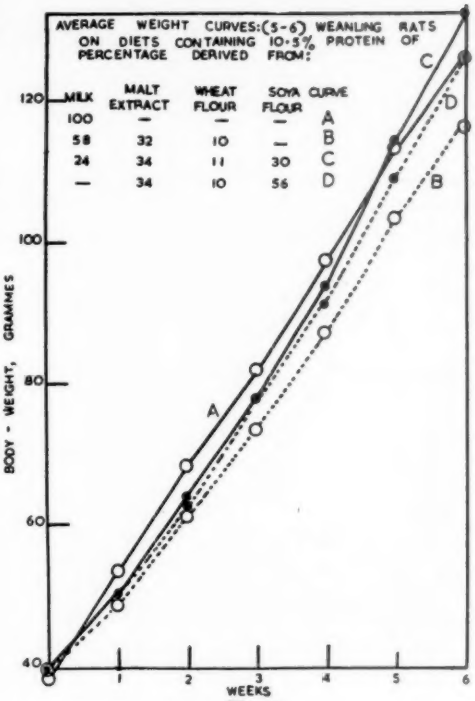
AVERAGE WEIGHT CURVES: (5-6) WEANLING RATS ON DIETS CONTAINING 10·5% PROTEIN OF PERCENTAGE DERIVED FROM:
MILK | MALT EXTRACT | WHEAT FLOUR | SOYA FLOUR | CURVE
100 | — | — | — | A
58 | 32 | 10 | — | B
24 | 34 | 11 | 30 | C
— | 34 | 10 | 56 | D
BODY - WEIGHT, GRAMMES
WEEKS

Fig. 2

Fig. 2 Supplementary actions of proteins, malt extract, wheat flour, soya flour. (From Chick and Slack, 1946.)

study of this subject, there is a general agreement in the relative values assigned to the proteins of different foods, as obtained from the results of tests with the different methods.

The value of any protein, as consumed in an ordinary mixed diet, is usually greater than its value when consumed alone, as in the type of biological experiment just described. For the deficiency of a particular essential amino acid in any protein in any one food may often be corrected by the presence of a surplus in another protein contained in the same food or in a different food present in the same diet. Such supplementary action between proteins can thus be predicted from a knowledge of the relative amounts they contain of the different essential amino acids.

It was shown by the early biological studies with rats of Osborne and Mendel (1919) and of McCollum and his colleagues,* confirmed by more recent work of the same type by Hoagland and Snider (1927), that mixtures of proteins of animal origin with less valuable cereal proteins have a growth-supporting ability which is often not inferior to that of animal protein alone. Mitchell and Carman (1926), using a biological method of somewhat different type, also demonstrated this fact for mixtures of milk or beef with white wheat flour. The explanation is not far to seek. Cereal proteins while well supplied with the sulphur-containing amino acids cystine and methionine are deficient in the essential amino acid lysine, which is present in relative abundance in the proteins of meat and milk. These foods are, however, relatively poor in the sulphur amino acids.

In the course of recent work carried out in the Division of Nutrition of the Lister Institute, on the capacity to support growth possessed by the proteins of some common foods, some interesting examples of complementary action were noted, of which a few had not previously been reported. In some cases the supplementary action was between proteins of different foods, in others between those present in the same food. In some cases the known amino acid composition of the proteins involved offered a satisfactory explana-

* For a clear and concise account of the earlier work on supplementary action of different proteins reference may be made to McCollum, E. V., Orent-Keiles, Elsa, and Day, Harry G., The Newer Knowledge of Nutrition, ed. 5, New York, Macmillan Company, 1939, ch. vi.

tion of the observed effect, but in others none was forthcoming. The following are cited as instructive examples.

1. Proteins of Soya and those of Cereals

Advantageous interaction between these proteins was well demonstrated in some experiments by Hove, Carpenter, and Harrel (1945), in which groups of young rats were fed on similarly composed diets containing about 10 percent protein derived, respectively, from white wheat flour, soya flour, and milk. In these three cases the corresponding P.E.R.'s were 0.83, 2.14, and 2.84. When, however, the 10 percent protein was supplied by mixtures of wheat flour with milk or soya, the P.E.R. was found to be greater than the figure of the arithmetic mean, as calculated from the relative proportions in the diet of proteins supplied by the two components (Fig. 1). This is shown where a mixture in equal amounts of protein from white flour and soya flour is seen to have a P.E.R. of about 2.1, whereas the calculated value would be about 1.5. Further, the P.E.R. of the proteins in this mixture has a value of the same order as a mixture in similar proportions of the proteins of white flour and milk.

An example of more practical interest is provided by a malted baby-food, called maltavena, prepared from malted barley, oat flour, and soya flour. This was discovered by Caprino in Rome in 1944, and used successfully by Red Cross workers in that city as a dietary supplement for young children during a period of milk scarcity. With the expectation of a wider use of such preparations in Central Europe after the end of the recent war, the Division of Nutrition was requested by UNRRA to test them experimentally for their growth-producing power for weanling rats. To our surprise we found that a mixture of malt extract, white flour, and soya flour, in which these ingredients contributed, respectively, about 34, 10, and 56 percent of the total protein, had a growth-supporting value about equal to that of a diet in which all the protein (about 10.5 percent of the dry weight) was derived from milk (Fig. 2).

Carefully controlled human trials of preparations similar to the above have been carried out recently in Germany by the Research Unit of the British Medical Research Council. In these tests the progress, over several months, of young children and infants whose diet contained a large proportion of such foods was found to be not inferior to that of control groups in which they were replaced by milk (Dean, 1949, a, b).

The complementary effect of soya proteins for those of white flour and barley is readily explained by differences in content of essential amino acids. The soya proteins, while rich in lysine, an amino acid specially needed for growth, are probably poor in methionine; cereal proteins, on the other hand, while deficient in lysine, have a relative abundance of sulphur-containing amino acids.

2. Meat Proteins and those of White Wheat Flour

The earlier work showing supplementary action of meat proteins for those of bread has already been mentioned. An even more dramatic effect was produced by supplementing white flour with a beef extract. "Beef tea," a hot aqueous extract of beef from which the solids had been removed, was formerly recommended as a nourishing food for invalids and convalescents, but later fell into disrepute as having supposedly no value beyond that of a stimulating drink. It was found by us that when such a beef extract supplied all the nitrogen in an otherwise complete diet, the young rats consuming it showed no weight increase, even when the nitrogen was present to the extent of 3.6 percent of the dry weight (20 percent "crude protein"). On a similar diet containing only 2.2 percent nitrogen, of which one-fourth was derived from beef tea and three-fourths from white flour, growth was steady and at a rate exceeding that shown when white flour alone provided all the nitrogen (Fig. 3). The beef tea when cooled set to a firm jelly and was found to contain 70

Fig. 3

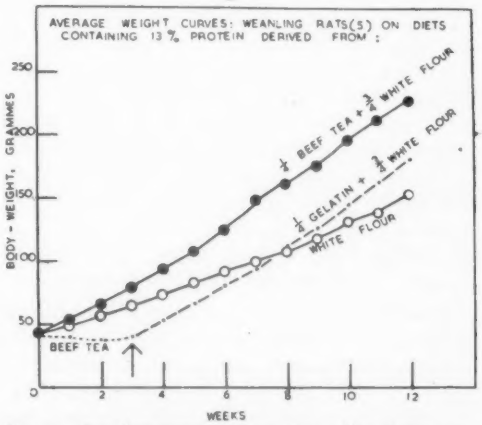

Fig. 3 Supplementary action for white flour proteins of proteins in beef tea and of gelatin. (From Chick, 1948.)

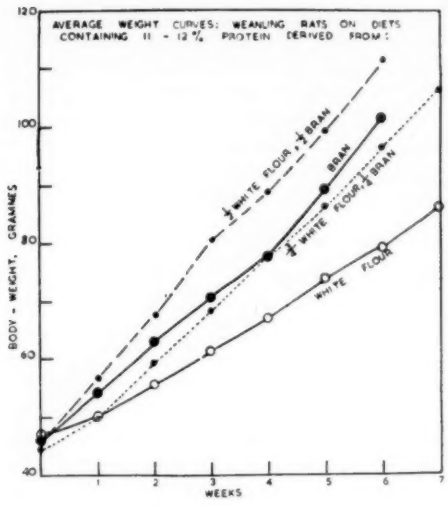
AVERAGE WEIGHT CURVES: WEANLING RATS ON DIETS CONTAINING 11 - 12 % PROTEIN DERIVED FROM:
BODY - WEIGHT, GRAMMES
WEEKS
½ WHITE FLOUR, ½ BRAN
BRAN
¾ WHITE FLOUR, ¼ BRAN
WHITE FLOUR

Fig. 4

Fig. 4 **Supplementary action between the proteins in white wheat flour (endosperm) and those in the outer layers of the grain (bran, aleurone). (From Chick, Cutting, Martin, and Slack, 1948.)**

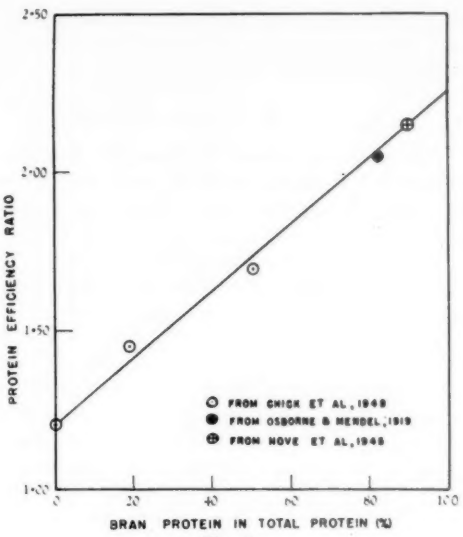
PROTEIN EFFICIENCY RATIO
BRAN PROTEIN IN TOTAL PROTEIN (%)
FROM CHICK ET AL., 1948
FROM OSBORNE & MENDEL, 1919
FROM HOVE ET AL., 1948

Fig. 5

Fig. 5 **Relationship between the P.E.R. of the mixed proteins in diets derived from white flour and bran in different proportions and the percentage of the total proteins provided by bran (From Chick, Cutting, Martin, and Slack, 1948.)**

percent of its nitrogen in the form of gelatin. A diet in which gelatin provided all the nitrogen (2.2 percent on dry weight of diet) was unable to induce any weight increase, but when the same amount of nitrogen content was provided from a mixture of gelatin and white flour, satisfactory growth occurred (Chick and Slack, 1945).

Gelatin is known to be an incomplete protein, lacking both tryptophane and cystine which are present in satisfactory amount in cereal proteins. It is, however, rich in the important amino acid lysine, in which cereal proteins are notably deficient. The "sparing action" for protein in a diet possessed by gelatin has long been known and studied by many workers. (Lusk, 1928.)

3. Proteins of Wheat Bran and those of White Wheat Flour (Endosperm)

The mixture of proteins in the whole wheat grain has repeatedly been shown to possess a greater growth-supporting capacity than those of the portions of the grain from which white flour is milled (Chick, 1942; Chick, Copping, and Slack, 1946; Chick and Slack, 1948). When maintained on diets containing 11 to 12 percent protein derived from white flour, the average weekly weight increase of weanling rats was found to be 6.5 Gm. When, however, without other alteration, one-quarter and one-half of the above protein were replaced by an equal amount of protein from wheat bran, the respective rates of weight increase were 8.8 and 10.9 Gm. The calculated P.E.R.'s of the proteins in the three tests were, respectively, 1.21, 1.44, and 1.68 (Fig. 4). Jones and Gersdorff (1923, 1925) showed that the proteins isolated from wheat bran contained about twice the amount of cystine, arginine, and lysine as was present in similar proteins isolated from wheat endosperm. Barton-Wright and Moran (1946), from microbiologic analyses, found the proteins of the inner portions of the wheat grain to be relatively deficient in arginine, tryptophane, and lysine, as compared with the proteins contained in the outer layers.

If the values of the P.E.R.'s for the proteins contained in the three diets described above be plotted against the proportion of bran protein contained in the mixtures, a straight line is obtained, showing that the advantage of adding bran is directly proportional to the amount simulta-

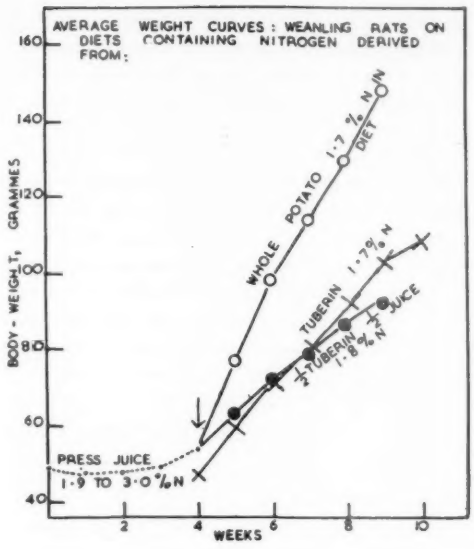
AVERAGE WEIGHT CURVES : WEANLING RATS ON DIETS CONTAINING NITROGEN DERIVED FROM:
BODY - WEIGHT, GRAMMES
WEEKS
WHOLE POTATO 1·7 % N DIET
TUBERIN 1·7% N
½ TUBERIN 1·8 % N + ½ JUICE
PRESS JUICE 1·9 TO 3·0 %N

Fig. 6

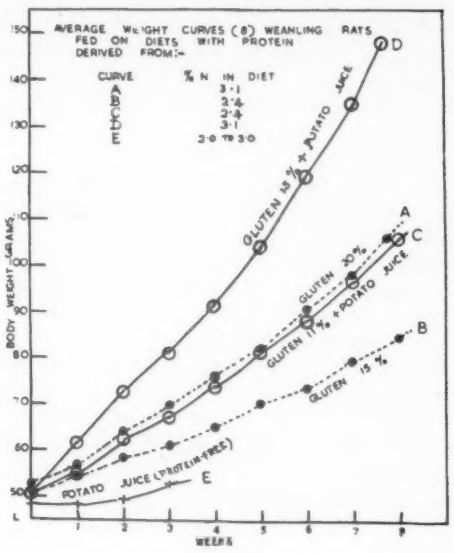
AVERAGE WEIGHT CURVES (8) WEANLING RATS FED ON DIETS WITH PROTEIN DERIVED FROM:-
CURVE
% N IN DIET
GLUTEN 15 % + POTATO JUICE
GLUTEN 20%
GLUTEN 17½ % + POTATO JUICE
GLUTEN 15 %
POTATO JUICE (PROTEIN-FREE)
WEEKS

Fig. 7

Fig. 6 Supplementary action of protein and non-protein nitrogenous substances in the potato tuber. (From Chick and Slack 1949.)

Fig. 7 Supplementary value for growth of protein-free potato juice for wheat gluten. (Chick and Slack, unpublished work.)

neously added of some essential nutrient, in this case the extra lysine or tryptophane or both (Fig. 5).

4. Protein and Non-Protein Nitrogenous Substances in the Potato

The nitrogenous substances in the potato have a value, both for maintenance of nitrogenous equilibrium in man and animals (Rubner, 1879; Hindhede, 1913; Kon, 1928) and for support of growth in young animals (Chick and Cutting, 1943), which is greater weight for weight than that of the nitrogenous materials in whole wheat flour. This fact is the more remarkable since in the potato only one-half or less of the nitrogen is in the form of protein, whereas in the wheat grain all but a small proportion is in that form. Of the non-protein nitrogen present in the expressed juice of the raw potato after removal of the protein (tuberin), by heat coagulation at the isoelectric point, about one-fifth is amino acid, two-fifths are amide and two-fifths basic nitrogenous compounds (Neuberger and Sanger, 1942).

The nitrogen in the mixture of non-protein nitrogenous materials was found to have no measurable growth-promoting capacity, but when mixed with tuberin nitrogen, in the proportion of 1:1, the ratio in which protein and non-protein nitrogen was present in the sample of whole potato used, the effect was of the same order as occurred with diets containing an equal amount of nitrogen as tuberin. Further, the mixture of protein or non-protein nitrogen as contained in the whole potato had a value for supporting growth which was usually greater than that of an equal amount of nitrogen fed as tuberin only (Fig. 6, Chick and Cutting, 1945; Slack, 1948; Chick and Slack, 1949).

The non-protein nitrogen of the potato was found to have also a supplementary value for wheat protein, and this was especially marked for gluten, the chief protein present in wheat flour. With a diet containing its nitrogen as 20 percent (on dry weight) of gluten, the average weekly weight increase for rats over seven weeks from the time of weaning was 6.5 Gm. When one-fourth of the gluten was replaced by an equivalent amount of nitrogen from the non-protein nitrogenous fraction of potato sap, the rate of weight increase was almost doubled, to 11.5 Gm. weekly (Fig. 7).

In this instance a study of the amino acid composition of the materials involved has not as yet afforded an adequate explanation of their complementary action (Slack, 1948).

Summary and Conclusion

In the first three of the four instances cited—the interaction of cereal and soya proteins and of the proteins of white wheat flour with those of meat or of wheat bran—the enhanced nutritive value shown in the mixtures is readily explained by a supplementary effect arising from differences in the amino-acid composition of the proteins involved. In the fourth instance—the supplementary effect existing between the non-protein nitrogen of the potato and potato protein or wheat gluten—no such explanation is forthcoming, and the result remains a puzzle.

The high nutritive value of the mixture of vegetable proteins, shown in the experiments described under 1, indicates that an appropriate combination of these proteins can be so arranged as to provide an adequate supply of essential amino acids which, as in the case cited, may reproduce the advantageous provision present in milk proteins. On the ground of amino-acid composition, therefore, there would seem to be no scientific basis for the conviction, so widely held, that a certain proportion of animal protein is necessary, or at least highly desirable, in a human diet. Whether the reason for the general acceptability and supposed need of animal foods in human diets is to be referred to psychologic causes or to the presence of some unrecognized important nutrient in these foods, not necessarily of a protein or amino-acid nature, is at present uncertain.

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Psychiatric Aspects of Hospital Practice

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THIS DISCUSSION will be limited to the emotional problems of the ordinary physically ill patient in the general hospital, rather than to patients with specific psychosomatic illnesses or the problems of hospitalization for the psychotic or severely neurotic patient.

Hospitals are traditionally institutions of routine and are frequently very rigid. Patients who are not able to adjust to this routine may become anxious even to the point where anxiety interferes with their recovery. Naturally, the reasons for certain procedures must be given consideration before altering them for any individual. The basis for most routine is to give the best possible care with the least expenditure of time and energy on the part of the hospital personnel. Routine can then only be altered if the staff is large enough to permit it. This is a difficult goal for many hospitals but it is something to work toward. Another basis for many hospital procedures is hygiene. Some techniques in this field could probably bear re-evaluation since in some instances they seem to be retained because of tradition rather than for any real benefit to the patient. To illustrate this point I would like to relate a recent experience.

I had been seeing a child in a hospital where it is the rule for physicians to wear a white gown in the ward. I do not know the real basis for the rule or how the gown was supposed to protect the children from infection, because these gowns were hung on a rack with coats and hats and were used repeatedly by different persons. I was allowed to bring toys into the ward for my little patient, and no handwashing was required. One day when I was unable to find a gown and entered the ward without one a clerk in street clothes came to remind me of the rule! So often rigid adherence to routine without regard for any fundamental need is accompanied by coldness and even harshness on the part of those responsible for enforcing rules and regulations. Tanner[1] has called our hospitals inhospitable and emphasizes the importance of friendliness in all relations with the public on the part of such personnel as switchboard operators, information clerks, and elevator operators, as well as doctors and nurses. These people frequently set the tone of a hospital for the entering patient or the anxious relative.

I shall discuss in some detail various causes and manifestations of anxiety in the hospitalized patient which may be handled in a relatively simple manner by the individualization of some of the hospital routine or through a better understanding by hospital personnel. Because more has been written about children's wards from a psychiatric standpoint than about adult patients, and because my own experience has been greater in this field, I am going to use children's problems as the core of my discussion. However, many of the principles presented here are also applicable to adults.

In a recent paper on the psychopathology of physical illness and hospital residence, Vander Veer[5] outlined the causes of anxiety in the hospitalized child and its usual manifestations. I shall use his outline, supplementing it with material from papers by Tanner and Jensen and Comly as well as my own experience and that of my colleagues. Because I learned so much about the needs of hospitalized patients from my experience in giving psychotherapy to a child whom I visited weekly over a period of four months, and because I will refer frequently to this case, I shall give a brief summary of the child's history.

Frank was an eight-year-old boy with ulcerative colitis of five years' duration. He had been born a few months after his parents' marriage and at a time when there was considerable dissension between parents and maternal grandparents. The mother was extremely guilty toward the boy and tried to compensate by a great deal of concern over his feeding. His entire feeding history was a stormy one and all his life she had forced and bribed him to eat. His nutritional state had always been poor. After his father's return from the Service the child developed ulcerative colitis, was repeatedly hospitalized, and was several times at the point of death. Largely because of the die-

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tary problem the boy and his mother were referred for psychiatric treatment. He made progress, but after six months a severe kidney complication was discovered. Within two months he was hospitalized with acidosis and uremia. He improved initially, but later his condition grew worse and he lived for only four months. The autopsy revealed a generalized amyloidosis. During his last hospitalization I saw him weekly and was able to observe his reactions to fears as well as to the general routine of the ward.

Briefly, children may become anxious through sensing the anxiety of adults, from fear of injury, because of reactions to their own conscience, because of separation from parents or other familiar people, and from actual physical suffering.

The anxious adults in the environment may be either hospital staff or parents. It is important that those caring for children be able to maintain a calm, unhurried, friendly attitude, and feel secure in their own ability to help children. For this reason the staff of a children's ward should be very carefully chosen. Parents may be expected to be particularly anxious during the admission procedure. Much can be done by the physician before admission and by the house staff during the taking of the history to explain the child's illness and what can be expected, and by accepting the parents' feelings regarding separation. If the parents are assured that the hospital is a friendly as well as a competent place, many of their anxieties will be relieved and the child will likewise feel more comfortable. It is usually of some comfort to the mother to see the room or ward and to be introduced to the nurses who will care for her child. In the early stages of a child's hospitalization telephone calls from the attending physician telling of improvement rather than only a possible turn for the worse may cut down the parents' anxiety which otherwise often results in frequent calls from them at inconvenient hours.

Anxiety in the parents should be one factor in determining the frequency of visits. If all efforts to relieve their anxiety have failed, it may be better for the child to have no visitors. However, the effects of visits should be evaluated carefully before such a decision is made, as some reaction and increased boisterousness following parents' visits are healthy signs. When a child becomes worse after they have been to see him, there should be an investigation into the cause.

During one of Frank's hospitalizations it was necessary to stop his mother's visits because she brought so much food with her. This was an expression of the anxiety which she had evidenced throughout his life—that she wasn't giving him enough to eat. One time I found him weeping because his mother had told him she would be back the following day, which he knew was not a visiting day. The literature contains many examples of lies which parents have told because of their anxiety and which have hindered the child's recovery. It is much easier for a child to bear the bitter truth than to be disappointed repeatedly by lies. Often anxious parents instill their own fears into their child by attempts at reassurance. An adult patient of mine once told me that whenever she or her sisters were ill as children, their mother would reassure them that they would still be able to bear children when they were grown up. As a result the girls all grew up with considerable doubt about their ability to become mothers. Hospital staffs should be aware of all such possibilities as these when an unexplained relapse occurs.

Some of the most important preventive work in reducing anxiety can be done by helping the child handle his fear of injury. Unfortunately, many parents use doctors and nurses as threats to make a child behave. The white uniform has become a symbol to such an extent that one hospital found it wise to ask the nurses in a ward for disturbed children to wear ordinary street clothes. These various fears need to be appreciated and handled reassuringly during the admission procedure.

A source of fear which has been mentioned but not emphasized enough because it is frequently difficult to detect is the aggressive joke or teasing. Teasing is a very common method of expressing hostility in a relatively socially acceptable way in the family and the usual social relationships. Children, especially when very young, do not understand the joke and take the underlying hostility or threat very seriously. Persons who express their hostility in this fashion should probably not work with children.

Children may become very fearful about themselves when exposed to seriously ill or dying children. Most hospitals take care of this danger adequately by separation. However, the fears of medical patients must be carefully handled if they have been exposed to children who are having surgical treatment even of a minor nature.

Few persons understand what fears may be aroused in children from listening to medical discussions. Often the child may not understand the conversation, but from occasional words and facial expressions he builds up a fantasy far worse than the discussion would warrant.

As an example of the distortion of medical information which may hinder a child's progress, let me cite Frank's reaction to such an occurrence. After he developed edema he was placed on a

salt-free diet and the gross swelling rapidly disappeared. He seemed more hopeful and actually developed a real appetite for the first time in his life. Gradually this dropped off and he again seemed anxious and depressed. It was reported to me that he cried when anyone teased him about his thinness. In discussing this with him I discovered that he was confused about whether he was supposed to gain or lose weight. All his life those close to him had worried about his eating and had encouraged him to eat more, but he had picked up part of a conversation concerning his edema and understood only that his doctors were looking for a drop in his weight.

An important and simple method of handling a child's fear of injury is adequate explanation of all technical procedures. Much better cooperation can be obtained if the child is given a simple, honest explanation of what is to be done and why such procedures as x-rays, hypodermics, or an operation are necessary. The pain, when any is involved, should not be denied and it is well to give the child an opportunity to express his hostility for pain inflicted. Emphasis, however, need not be placed on how much is to be removed in an operation, but rather on how much the procedure will be helpful to the child in spite of the discomfort involved. Operations in particular may need detailed explanation, and Vander Veer describes a case in which the boy was taken on a tour of the operating room, with an explanation of the anesthesia and introductions to the nurses who would be there at the time of his operation. Several writers emphasize the bad effects of postponing an operation once the child is emotionally set for it.

Explanation of simple technical procedures is often time saving in the long run. I recall an experience I had as an interne. I admitted a six-year-old girl as a suspect meningitis patient. The admission routine included, besides the usual physical examination, a Mantoux test, intravenous puncture for blood examination, intramuscular injection of measles convalescent serum, and a lumbar puncture. I explained each time what I was going to do, answered all the little girl's questions about the reasons for each procedure, and assured her that everyone had fears about these things. She asked if even babies had to have these things done to them, and, when I said they did, she thought she would then surely be able to stand it. She cooperated perfectly and did not cry until the resident, who was in a hurry, unceremoniously forced her mouth open to look at her throat. Occasionally a very fearful child, although trying to cooperate, will still need restraint. If this is given gently but firmly and with understanding, rather than in a punitive manner, the child may appreciate this support to his own weakness.

Handling fears due to a child's own conscience is frequently much more difficult. The symptoms can be recognized, but one cannot deal with the underlying need for punishment. If the symptoms are severe, psychiatric investigation may be indicated.

Frank was typical of this sort of child. He was frequently depressed, showed a poor appetite, and often submitted too willingly to painful procedures. A different type of child, suffering from a bad conscience, might provoke the house staff in order to be punished for his unknown sins.

If the symptoms are not too severe they may be handled in a superficial way. Depressed children can be encouraged to express their feelings more openly and the provocative one can be firmly restricted rather than punished. The house staff can also help by showing some care in not promoting these feelings. Attitudes of adults regarding "goodness" and "badness" influence ideas which may already be established. A child may feel that his illness is punishment for being "bad." Mothers, and often the hospital personnel, may express ideas about goodness or badness concerned with eating, urinating, defecating, or sleeping. On one of my visits to Frank an attendant told me he had been a good boy that day; he had eaten his lunch.

Much has been written about the anxiety a child suffers on being separated from his parents. The younger he is the more he has depended on them to satisfy all his needs, and the more difficult he finds it to understand that other people, too, may help him. This is one of the most important reasons for giving time and thought to the process of admission to a hospital. The child should be given time enough to make the transition to the substitution of the hospital staff for his parents. Besides the unhurried, friendly attitude mentioned, it may be of help to have the parent accompany the child to the ward. Especially for the small child a favorite toy is a valuable bridge between a known and unknown environment. An effort to learn and use the child's name helps to make him feel at home. Adults are likewise helped in their adjustment to the hospital by the use of their proper names in contrast to the practice so frequently adopted in some charity hospitals where all old men are called "Dad," and all obstetrical patients, "Mother."

It is because of the damage that may be done by separation anxiety that the quarantine or isolation rules need to be examined and perhaps modi-

fied. It may be more traumatic for a child to be separated suddenly from his parents and isolated completely from human contact, except for the barest essentials of physical care given by strangers, than to run the risk of contagious disease. Frequently the rules of hygiene are so rigid that it just becomes too much trouble to touch, let alone to comfort, a child.

Separation anxiety should likewise influence the formulation of visiting rules. Unless the parent is overly anxious, frequent visiting early in the hospitalization is often necessary. Young children sometimes confuse separation and death and cannot understand a parent's long absence.

The subject of separation anxiety would not be complete without a consideration also of the attachments a child may form for the house staff. Members of the staff who are leaving the hospital service or going on vacation should always inform the child in advance and, if possible, introduce the substitute. At least some familiar figures should remain on a ward when changes in service are made.

The anxiety produced by actual physical suffering may be an insoluble problem. If the child has every chance for recovery this fact can be emphasized and much reassurance given him. It is not wise to offer hope that is unrealistic, because it cannot be done sincerely. I had this problem with Frank. For six months I knew he could not live. I saw him regularly, which in itself can give great emotional support. In the hospital I explained the various tests and diets that were tried and sympathized with the discomfort these entailed. I no longer talked to him about what things would be like when he was well. He gained enough emotional support from this program to spend an enjoyable Christmas at home and to participate on an ambulatory basis in school and recreational activities on the ward until a week and a half before his death.

One of the commonest symptoms of anxiety is regression. In children this may be evidenced by thumb-sucking, bed-wetting, or soiling, as well as by frequent demands for attention. Although a certain amount of regression is a natural part of illness, some hospitals foster it unnecessarily. When care is cut to the bare minimum of physical necessity, the patient is forced to turn inward to more primitive ways of seeking solace. Frequently, instead of time's being saved by these methods, recovery is slowed down. Besides preventing regression by understanding the emotional needs of a child and cutting down sources of anxiety, regression also needs re-education. In some ways the interest of the patient must be directed toward the outside world. This may be done by increasing the number of his visitors, providing special ward activities such as school or occupational therapy, or if such special methods are not available, by allowing him to assist in simple ward duties. Placing children in groups according to age is advisable. Another simple device is to permit a child who is not confined to bed to wear his own clothes. This is also applicable to adults who are hospitalized for the administration of certain tests, the regulation of diet, or similar procedures where bed rest is not necessary.

Methods of indicating anxiety which are not so common include rocking, head banging, or frequent masturbation. The methods described for handling regression may be tried. Some children who seem to be extremely provocative defy rules to assure themselves that their bodies are intact. Vander Veer gives the example of a boy with poliomyelitis who could not keep an extremity quiet because he had to be sure it was there. Reassurance must be given to allay such fears in children who fail to cooperate in procedures requiring lack of motion in some part. Other children may bluff in a frightening situation and deny their fears. Actually, they need just as much explanation and reassurance as does a frankly scared child. In adults evidences of anxiety are much more likely to be irritability, demandingness, depression, or, possibly, only such physiological changes as variations in blood pressure, heart rate, or respiration.

I have tried to keep this discussion free from complex psychiatric terminology and theory. Through some of the recent experiences my colleagues and I have had on pediatric wards we have come to feel that the house staffs sincerely attempted to handle emotional problems and frequently had an excellent intellectual understanding of psychiatric theory. Nevertheless, frequently they actually failed in utilizing some of the simplest techniques in understanding and handling anxiety. It can happen that a child may gain more emotional support from an uneducated but understanding maid than from the best trained pediatric nurse. It is important to staff a pediatric ward with personnel who have a natural liking for children, who can allow them to regress but help to educate them toward independence, who can accept their hostility with understanding, and who can respect the child's ability to withstand discomfort with sufficient emotional support. I do not wish to imply that education destroys these natural abilities. However, some of our traditional teaching methods could be examined from this standpoint. Too frequently during "rounds" and clinic demonstrations, patients—both children and adults

—are treated more like pathologic specimens than human beings. Fears, both real and distorted, can develop from listening to the most veiled discussion of a case. Methods of teaching should certainly take into account the emotional as well as the physical difficulties of the patient if the proper example is to be set for those in training.

Although the principles mentioned in the preceding pages can be used in a modified way to apply to adult patients, there are several important problems specific to the field of obstetrics. There has been considerable controversy over the advantages of "rooming-in" or the Cornelian Corner. Its advocates have established units in Detroit, New Haven, and Washington, and have written enthusiastically in medical and popular literature about the advantages to both mother and child. On the other hand, Reid and Cohen[5] have recently written an article advising caution in discarding scientific advances, which have decreased both maternal and infant mortality, for the sake of a psychology which they feel is questionable. Naturally, no one wishes to increase mortality or morbidity rates, but within these limits, the individual emotional needs of mother and child can still receive consideration. Even the most enthusiastic advocate of rooming-in does not advise its wholesale use, and Bartemeier[1] specifically warns that it is not suitable for the highly neurotic woman who is insecure as a mother.

This subject leads immediately into the consideration of breast feeding. Here the participants in the controversy seem to have even more rigid ideas about which is preferable, bottle or breast. Again, I feel that the needs of the mother deserve greater consideration than those of the physician or the nurse. As much harm may be done by forcing breast feeding as by not permitting it. Frank's mother, despite her negative feelings toward the child because of the difficulties surrounding his conception and birth, was forced to breast feed him. She was always sure he was not getting enough. This only increased her own frustration and sense of inadequacy. When a problem as great as this one exists, breast feeding does not insure against feeding difficulties.

The opposite attitude, however, seems to be by far the more common. Several friends and relatives who have recently had babies and had planned on at least attempting breast feeding found it too difficult to combat the often subtle opposition of obstetricians and nurses. In several instances the obstetrician evinced no interest in the baby at all. Breast feeding does take extra effort in the early stages, and nurses are not likely to work with mothers unless the obstetrical staff feels that it is worthwhile.

A fairly recent innovation in obstetrical practice is early ambulation and discharge. This plan has also been followed in surgery. I do not wish to discuss the advantages or risks but would like to point out that here, too, there are emotional implications. Prolonged convalescence may be evidence of regression or over-dependence, and one motive for early ambulation is to prevent regression. There are some patients, however, who may need a prolonged period of dependence. It would be of doubtful psychological value to shorten the period of care for a woman who already has a number of children at home and no help. She will need to gain emotional as well as physical strength before returning to a strenuous round of household responsibilities.

In conclusion, may I stress again that patients are individuals with individual emotional as well as physical problems, and their own individual methods of handling them. Too rigid a hospital routine is bound to increase anxiety and in the long run interfere with results the hospital is endeavoring to attain. I have tried to point out very briefly some of the manifestations of these emotional problems and some methods by which hospital staffs can handle them.

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Progress In Physiology*

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V. Heart

A. Cardiac Catherization for Diagnostic Purposes

Catherization of the right heart and pulmonary artery is indispensable in making a diagnosis in congenital heart disease. Interatrial septal defects are recognized by the higher oxygen content of the blood in the right atrium than in the venae cavae, which confirms the left to right shunt. Patent ductus arteriosus is recognized by the higher oxygen content of blood in the pulmonary artery than in the right ventricle. Interventricular septal defects are recognized by the high oxygen content of the blood in the right ventricle.

The pressure determinations of the various catheter positions are important. A marked reduction in pulmonary arterial blood flow can be demonstrated in the presence of pulmonary stenosis by the great decrease in pulmonary arterial pressure and increase in right ventricular pressure. If the blood flow through the pulmonary artery is below normal the Blalock-Taussig type of operation may prove of benefit.[46]

B. Cardiac Output by Various Methods

1. *Direct Fick.* The blood should be collected from the right ventricle or proximal portion of the pulmonary artery as this blood appears to be more representative of mixed blood than that from the right atrium. There are several sources of error in this method; all of the oxygen measurements, both blood and air analysis, are subject to some error. The sampling of the mixed venous blood may be inadequate due to streaming of blood within the heart and minute to minute variation of cardiac output. The determination of oxygen consumption is likewise subject to some error. The total error of the Fick method may be between 15 and 25 percent; although the application of the Fick principle is not an ideal standard for comparative studies, it offers the best means available.[46,47]

2. *Ballistocardiograph.* Ballistocardiographic studies of 58 cases have been reported; 87 percent of the values obtained on normal individuals fall within 25 percent of those by the catheter method.[48] This method is not satisfactory for patients with aortic insufficiency or respiratory distress or for those who cannot hold the breath.

3. *Electrokymography.* A recent method for the determination of cardiac output is that of electrokymography.[49] The chief use for the roentgen electrokymograph is in the production of graphic records of shadow border motion and density changes in a fluoroscopic image. As the heart and great vessels go through their systolic-diastolic cycle, the two above types of changes take place in the fluoroscopic shadow image. This is due to the fact that x-ray transmission through the pulsating organ is decreased while the heart is full and increased while it is contracted. By the use of the electrokymograph these changes in the fluoroscopic shadow image are converted into variations in an electric current and recorded by any suitable recording galvanometer. In order to identify various phases of the cardiac activity, it is essential to use simultaneously recorded heart sounds, electrocardiograms, and carotid pulse tracings. This method has been used successfully in determining the cardiac output.[50]

4. *Dye injection method.* This is also called the Stewart method. It is a fairly satisfactory method for the determination of cardiac output.[51]

The electrokymographic method has been compared with the direct Fick[52] and the dye injection method[53] in dogs.

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VI. Peripheral circulation

A. Strain Gauge for Recording Arterial and Intracardiac Pressures

The strain gauge in principle is a Wheatstone bridge, one limb of which undergoes resistive changes during stretch. This furnishes a means of converting pressure to electrical energy, so that arterial blood pressure may be recorded at some distance from the subject by means of a galvanometer or cathode ray oscillograph. This is a satisfactory way of making a direct measurement of arterial blood pressure,[54,55] and intracardiac pressures. It records significant component frequencies of the ventricular pulse in their correct amplitude and phase relationships, within practical limits of accuracy.

B. Reversible and Irreversible Shock in Relation to the Production of VEM and VDM

The arrangement and function of the various structures in the capillary bed, as described by Chambers,[86] will be reviewed. The capillary bed consists of (1) preferential channels, or thoroughfare channels which begin at the terminal arterioles as muscular meatarterioles and pass to the beginning venules; (2) sphincteric offshoots from the thoroughfare channel which control the outflow of blood into the capillary network; and (3) the nonmuscular true capillaries which form the bulk of the capillary bed and drain into the distal portions of the thoroughfare channels. This pattern makes possible great variation in the distribution of blood throughout a given tissue.

Outward filtration is thought to take place in the thoroughfare channels; the true capillaries serve for inward filtration. The functions are under the control of vasomotion; this refers to the spontaneously recurring periods of relaxation and constriction of the thoroughfare channel and of the precapillary sphincters.

Vasomotion depends upon vasoexcitor and vasodepressor factors. Vasomotion affects fluid exchange by determining the flow of blood to be either through the thoroughfare channels or by way of the true capillaries. When vasomotion is deficient or absent, the precapillary sphincters remain open and the balance of fluid exchange is in favor of outward filtration, because of stagnation in the true capillaries. Increased vasomotion shifts the balance to inward filtration.

In shock, as the cardiac output falls, renal blood flow falls in proportion to the severity of the shock.[87] VEM (vasoexcitatory material) is produced by anoxic kidneys, and this has a marked effect on the capillary bed. The thoroughfare channels alone are open; the precapillary sphincters remain closed so the flow through the true capillaries virtually ceases. Shock is reversible at this stage. Even though the skeletal muscles are producing VDM (vasodepressor material) at this time, it is being promptly destroyed by the liver. If the condition progresses, the liver begins to suffer from the effects of decreased blood supply and not only fails to destroy the small amounts of VDM produced by the skeletal muscles, but begins to form VDM itself, in large amounts. As VDM enters the blood stream in excessive amounts, it causes a cessation of vasomotion in the metarterioles and precapillary sphincters, and permits blood to enter the true capillaries, in which it stagnates and outward filtration takes place. The capillaries become permeable, due to hypoxia, and the condition of shock has now reached the irreversible stage.[89,90]

C. Sphincteric Mechanism in Liver

The existence of a sphincteric or throttle mechanism in the liver has been shown by the injection of Ascaris suum extract in dogs. The liver becomes turgid and purplish; it increases 50 to 150 percent in size. The portal pressure rises rapidly and the systemic venous pressure falls; the carotid pressure is decreased.[60] This indicates the great size of the hepatic reservoir when the outflow of blood is prevented by various substances which stimulate the contraction of the outlet sphincters.

VII. Respiration

A. Oxygen Saturation by Use of Oximeter

The van Slyke method for determining oxygen saturation of arterial blood *in vitro* is time consuming; it is being replaced by a more rapid method. Originally the oximeter was used to follow changes in oxygen saturation of arterial blood *in vivo*. It has been modified to permit continuous recording of absolute values of arterial oxygen saturation *in vivo* and the immediate determination of oxygen saturation of samples of arterial and mixed venous blood *in vitro*.[47,61,62]

B. Pulmonary Function Tests

The various tests used in evaluating pulmonary function have been summarized recently.[68] An interesting finding is that pulmonary function does not change after pneumonectomy.[64] In the postoperative state there was little or no change in the overall resting tidal volume, minute volume of respiration and oxygen consumption, in a group of 24 patients. There was a reduced maximal breathing capacity and breathing reserve, due to

reduction in depth of respiration during the maximal respiratory effort. Compensatory adjustments in the remaining lung were an increase in the tidal volume, minute volume of respiration, and oxygen consumption.

Bronchospirometry[65] permits the determination of the functional capacity of the two lungs separately. It aids in the selection of cases for various types of irreversible collapse therapy where clinical and roentgen examination often fail to allow accurate estimation of the functional capacity of the two lungs. It is helpful in the preoperative evaluation of patients in whom resection is contemplated. A single lumen endobronchial catheter is used.

C. Artificial Respiration

1. *Rocking methods.* The Eve rocking method[66] of artificial respiration has been found the most satisfactory of the manual methods. It consists of 10 double tilts per minute, with a ventilation of about 600 cc. per tilt of 50°. This method makes use of gravity; the weight of the abdominal contents pushes and pulls the diaphragm up and down like a piston. It is independent of muscle tone; it aids circulation; ribs and viscera are not injured, as sometimes happens in other methods.

Comroe and Dripps[67] compared the Schafer and Eve methods in two cases of respiratory arrest. Their data showed the complete inadequacy of the Schafer method and the adequate exchanges permitted by the Eve method, with a tilt of 45°.

The rocking bed has been found valuable in patients with respiratory embarrassment due to poliomyelitis.[68] It has many advantages, not only for benefit to the patient, but also for ease of nursing care and physical therapy treatments.

2. *Positive pressure methods.* Many methods have been tried; the one most suitable for maintaining artificial respiration in the temporarily apneic subject is the intermittent positive pressure method.[69] Of all the types of mask-pressure curves studied the most suitable was the asymmetric mask-pressure with gradually increasing pressure during inspiration, the pressure rapidly dropping to atmospheric early in expiration. The expiration time was equal to or exceeded inspiration time. The minute volume of respiration increased because of the increase in tidal volume, with decrease in rate. The blood pressure changes were small; the cardiac output by the direct Fick method increased 6 percent with this type of artificial respiration. The peak of the mask pressure should not be in excess of 25 cm. of water.

If too high a mask pressure is used there is hemoconcentration due to loss of fluid into tissue spaces as a result of high venous pressure,[70] and pooling of blood in the venous reservoirs.[71] As much as 6 percent of the blood volume may be sequestered under such circumstances. When this is combined with the loss of fluid determined by hemoconcentration, it is estimated that the total loss of circulating blood volume on breathing for 30 minutes at a pressure of 50 mm. Hg may be as great as 15 to 20 percent. These marked changes are adequate to account for the frequent development of syncope during periods of raised intrathoracic pressure.

VIII. Gastro-intestinal physiology

A. Humoral Mechanism for the Gastric Phase of Gastric Secretion

Distention of the pyloric region of the stomach leads to increased secretion, even in the absence of nerves.[72] This affords proof of the hormonal control of this phase of gastric secretion.

B. Enterogastrone

The use of enterogastrone in the treatment of peptic ulcer is still a moot point.[73,74]

IX. Kidneys in maintenance of neutrality

Pitts and his associates have studied the role of the kidneys in the maintenance of neutrality of the blood. Excess acid may leave the body in the form of weak organic acids, acid phosphates, or ammonium salts in the urine; excess alkali may be eliminated as bicarbonate in the urine. Pitts found that in severe ketosis as much as 750 mEq./1 of acid may be excreted in 24 hours.[75] He found that there is stabilization of the plasma bicarbonate concentration at a level of 24 to 28 mEq./1; as much as 220 mEq. of bicarbonate may be excreted in a liter of urine of pH 8.0.[76] These examples illustrate the almost unlimited ability of the kidneys to excrete base or acid.

X. Alloxan diabetes

Lazarow has reviewed alloxan diabetes in his article on diabetes.[77] Alloxan destroys the beta cells of the pancreas. The sensitivity of animals to alloxan is affected by the amount of protein in the previous diet; a low protein diet increases the susceptibility. A high fat diet, especially lard, increases the mortality following alloxan.

Glutathione protects animals against alloxan; it does so by reducing alloxan to dialuric acid.

Man is susceptible to alloxan; alloxan may be formed in the human body due to abnormal

metabolism of uric acid or as an intermediate product in the metabolism of pyrimidines.

The injection of alloxan provides the experimental physiologist with a satisfactory method of producing diabetes without the complications attendant upon the removal of the entire pancreas.

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Recent Advances in Pediatrics

May B. Guy, M.D.

THE 1949 YEARBOOK OF PEDIATRICS[1] states: "The year has been marked by a balance between advances in basic sciences related to pediatrics and an intensification of effort toward a broader application of known facts." Reflecting both of these aspects is much of the work done on applied physiology and pathology of the fetus and newborn infant. Progress made in overcoming former leading causes of death, such as birth injuries, diarrhea and enteritis, and respiratory diseases, brings other causes into the lead, and thus these are being subjected to more concentrated attack. Causes of death assuming relatively greater importance are: anoxia in the newborn; accidents among pre-school children; cancer in childhood. The incidence of prematurity remains high as a cause of death and predisposition to fatal complications. Congenital malformations are still prominent as a cause of death but remarkable progress has been made in surgical corrections. Improved prophylactic and antibacterial measures have effectively reduced the same illnesses, as in every branch of medicine, and many contagious diseases of childhood. A nationwide survey of child health services shows up some revealing inequalities and points toward fundamental remedies needed.

FETUS AND NEWBORN

Cooperative efforts of obstetricians and pediatricians[2] attempt to reduce mortality and morbidity in the fetal and newborn period. Because of reduction in deaths from other causes, asphyxia and atelectasis appear for the first time in the list of five leading causes of death in the fetus and newborn. Clifford[3] states that anoxic injury is the primary cause of 60 percent of mortality and morbidity among full term and premature infants. Anoxia may occur in utero, during the birth process, and after birth. In utero it is caused by anything interfering with the passage of oxygen from maternal blood to fetus, such as placental abnormality or disease, or systemic disease of the mother, such as heart failure or severe anemia. Anesthesia and analgesia undoubtedly play a part and there is much discussion and argument regarding their role. Nitrous oxide is an asphyxiating anesthetic if prolonged or used in great concentration. Spinal and caudal anesthesia may interfere with passage of oxygen by lowering maternal blood pressure. Barbiturates may depress the respiratory center of the fetus. No one drug is entirely safe under all conditions and much depends on the skill and judgment of the obstetrician using them. Choice of the proper anesthetic is especially important for the patient in premature labor.[4]

Cerebral injury of the fetus before or during labor may bring about stagnant anoxia or respiratory failure from injury to the vasomotor center or the respiratory center.

Extra-uterine anoxia may be due to mechanical obstruction of airways from aspirated fluid, blood, mucus, vernix, or meconium. Respiratory movements of the fetus take place in utero.[5] Normally they are gentle rhythmic movements, but asphyxic stimulation of the respiratory center may cause gasping movements with aspiration of amniotic fluid into the airways and resultant atelectasis after birth. A large amount of amniotic fluid in the lungs is thought to be pathognomonic of asphyxia in utero or labor. This aspirated material may become infected, causing pneumonia.

Atelectasis is more likely to occur in the premature infant because of the persistence of cuboidal epithelium lining the air spaces, which interferes with gas diffusion, and increased pulmonary connective tissue, which prevents expansion of alveoli.[5]

Asphyxia from any of these causes may be classified as mild, moderate, or severe rather than by the use of the old terms of "asphyxia livida" or "asphyxia pallida." For practical purposes, an infant is regarded as asphyxiated when no breathing takes place for thirty seconds after birth of the head. In asphyxia there are generalized vascular congestion, petachial hemorrhages, and edema, all of which may interfere with the proper function of many organs at birth and prevent expansion of the lungs. It has been shown that lack of oxygen to the fetal brain, for even short periods, results

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in so-called "devastation areas" that handicap the child mentally throughout life.[6]

In the treatment of asphyxia it is important to remove fluid from air passages gently, allow the cord to pulsate while administering oxygen to the mother, administer oxygen to the infant, and supply warmth and suction. Mechanical resuscitators are contraindicated. Carbon dioxide is regarded as unnecessary. Positive pressure into the lungs may be dangerous by "blowing out" emphysematous blebs. Most drugs are useless and some harmful. Minimum handling of the infant is important.[7]

The value of the routine use of vitamin K in reducing the incidence of hemorrhage of the newborn is being somewhat questioned.[2]

The incidence of prematurity remains the same despite improvement in prenatal care and decrease of syphilis as a cause. More studies are being made on the physiology and metabolism of premature infants. These show renal immaturity in practically all phases of renal function.[8] This knowledge has obvious implications in drug administration and in fluid and electrolyte balance. For example, an edematous premature newborn may have excess sodium and chloride and do better if food and fluids are withheld rather than if an attempt is made to alter the electrolyte balance.

A new problem of the premature infant is the recently observed syndrome of retrolental fibroplasia.[9] This is an ocular maldevelopment consisting of a mass of embryonic connective tissue behind the crystalline lens. It occurs in 23 percent of premature infants whose birth weight is less than three pounds. The signs are reduced vision and nystagmus usually first seen around the age of four months. The condition is usually bilateral and causes blindness. The etiology is still doubtful.[10]

In the treatment of erythroblastosis fetalis by exchange transfusion, statistical studies have brought out the beneficial effect of blood from female donors.[11,12] What the nature of the beneficial component of the blood is awaits future research.

Receiving trial in many hospitals are so-called "rooming-in" arrangements for infants instead of the traditional separate nurseries.[3]

Congenital Malformations

Recent developments in surgical therapy of malformations of the gastro-intestinal tract stress the importance of early diagnosis and treatment.[13] Those amenable to surgery in the first few days of life are esophageal atresia and tracheo-esophageal fistula (frequently combined),[14] intestinal atresia, imperforate anus, and meconium ileus.

Pyloric stenosis, malrotation of the intestines, and some diaphragmatic hernias usually need surgery within the first month of life. Important details in all such surgery upon infants are: choice of proper contrast medium in roentgenographic studies, type of anesthesia, careful regulation of the electrolyte, fluid, and nutritional balance. Special caution is necessary in administering saline solution to newborns since kidney function is relatively immature and excessive amounts of sodium may lead to edema.[15]

A few years ago all that could be done in congenital anomalies of the heart was to attempt to identify the lesion for the purpose of prognosis relative to disability and life expectancy. By comparison, methods now used in diagnosis and surgical management of malformed hearts and great vessels are miraculous. There are three distinct methods of study: (1) angiocardiography with intravenous injection of diodrast; (2) catheterization of the heart chambers for oxygen content and pressure relationships; (3) a combination of physical examination, x-ray, fluoroscopy, and electrocardiogram. The third method is the most frequently used and most of the important defects can be diagnosed by these simpler means.[16,17]

Newer Methods In Treatment of Diarrheas

Until recently the fluid and electrolyte losses from diarrhea with which we have been most concerned were of water, sodium, and chloride. The work of Darrow, Rapoport, and others has now focused attention upon other losses such as those of potassium, phosphate, and calcium, which arise primarily from the cells themselves.[18] Large potassium deficits may occur through tissue breakdown with liberation of potassium and through the inability of the cell membrane to hold back potassium in the presence of dehydration and insufficient circulation. Also, intracellular potassium may become displaced by sodium which normally occurs only in relatively small amounts in the cells. This displacement may be further aggravated by saline therapy. Calcium and phosphate may be lost in the urine because of acidosis, in addition to losses of these substances in the diarrheal stools.

Most of the fluids previously used for electrolyte correction resemble extracellular fluid in composition and do not contain materials present in large amounts in the cells or bones such as potassium or calcium. Darrow states that as much as one fourth to one half of the total muscle potassium may be lost. Newer solutions are designed to correct both the extracellular losses and the acidosis, and also to furnish potassium for the intracellular fluids.[19] In Butler's solution, there is some phosphate for cellular replacement. Darrow's outline of treatment[20] is: (1) improve circulation with

intravenous saline and glucose; (2) give Darrow's solution* by hypodermoclysis; (3) after some recovery, give electrolyte and water by mouth.

Treat shock whenever present. A concentrated state of the blood is not considered a contraindication to transfusions, which in this stage help to overcome oliguria and should precede the administration of potassium solutions.

Rapoport has recently stressed the importance of calcium in diarrheal states.[18] In the immediate "post acidotic" period, a rapid transfer of calcium (and also of potassium and phosphate) may take place to cells and bones depleted during the "acidotic" phase of diarrhea. Symptoms of convulsions and carpopedal spasm occur, as well as others more serious, and necessitate intravenous or oral administration of calcium salts.

Parenteral amino acids are unnecessary in the treatment of diarrhea unless there is an unusually prolonged period of fasting, nitrogen being replaced as soon as food is taken. Food is offered after some recovery has taken place and evidence of dehydration overcome. It is interesting to note that some of the foods which have been successfully used early in the treatment of diarrhea contain these necessary electrolytes. Milk (preferably boiled and skimmed) contains excellent amounts and in good proportions. Orange juice and canned tomato juice and banana all contain large amounts of potassium. Protein milk has no especial advantage and may even predispose toward acidosis in young babies.

Metabolism and Nutrition In Adolescence

Important contributions to the knowledge of nutrition and metabolism in adolescence have been made by Johnston.[21] His findings indicate that adequate provision for metabolic and dietary requirements may be an important factor in resistance to such diseases as reinfection tuberculosis, rheumatic fever, and a number of skeletal disorders, adolescent rickets, slipped upper femoral epiphysis, and vertebral epiphysitis.

The pre-pubertal growth spurt (10 to 14 years in girls and 15 to 19 years in boys) often shows negative calcium and nitrogen retention. The ability to retain calcium and nitrogen decreases as the termination of growth is approached and this may be an important factor in undermining nutrition and resistance to disease when intake of protein, calcium, and vitamin D is marginal.

Obese adolescents need a diet high in calcium and vitamin D and protein but low in calories, and attention should be given to the psychologic factors often underlying their increased food intake. Slipped epiphyses tend to occur in these larger children where size favors slipping in a joint which may be weakened by inadequate mineralization.

Accidents

The combined energies of the American Academy of Pediatrics, the National Safety Council, the Children's Bureau, and the Metropolitan Life Insurance Company are being directed toward curtailment of accidents, now the leading cause of death in childhood. According to the statistics of the Metropolitan Life Insurance Company,[22] accidents now outrank every other cause, at ages one to four, and the reduction in mortality in the past fifteen years has been relatively small. A campaign of safety education directed largely to adults should help to prevent these burns, poisonings, falls, motor vehicle accidents, and drownings in early childhood.

The National Safety Council reports that poisoning was the third most important cause of accidental death in the home in 1944.[23] The constant introduction of new poisons and the time lag, before the danger of new chemicals is detected and effective measure for treatment is found, render the problem more difficult. Poisons will produce nearly every symptom, from mild skin rashes to convulsions, coma, and death, which may easily be mistaken for disease and thus be overlooked.

Among the newer poisons is aniline ink used in laundry marks on diapers. This is absorbed from diapers worn and wet shortly after marking, and may cause severe cyanosis. Cyanosis may also occur from ingestion of certain kinds of orange or red crayons and from nitrite poisoning after ingestion of well water with a high nitrite content. DDT is probably less toxic than the kerosene sometimes mixed with it. Chief danger of the latter is to the lungs to which it may be carried both by aspiration and the blood stream.

British antilewisite (BAL) is a valuable antidote for some of the metallic poisons, especially mercury, and for arsenic.

Cancer In Childhood

Malignant disease now ranks first as a cause of death in the age group 5 to 9 years, second in 1 to 14 years. This apparent increase in incidence of neoplasms in childhood may be due in part to greater interest and more accurate diagnosis. There is a high incidence of sarcomas which are frequently radiosensitive, tend to progress rapidly, metastasize widely, and cause high mortality.

Wilms's embryomas of the kidney and neuro-

* Darrow's solution: Sodium bicarbonate, 4.4 Gm. per liter; potassium chloride, 2.7 Gm. per liter; sodium chloride, 3.0 Gm. per liter.

blastoma are the two most common types. Surgery and x-ray treatment have cured some of these types where diagnosis was made early. A defeatist attitude is not justified.[24]

Intracranial tumors are not infrequent in childhood. The clinical symptomatology, pathologic anatomy, and biologic course of such growths differ from those of brain tumors in adults. Few of them are benign. Most are gliomas and occur in the posterior fossa; if localizing signs occur they may be referable to the cerebellum. Most of the symptomatology is due to intracranial hypertension including enlargement of the head or separation of cranial sutures.[25,26]

Leukemia in children may be considered a malignant disease of the reticulo-endothelial system. Often the cells cannot be classified as lymphoid or myeloid, but are primitive "stem cells." Recently the folic acid inhibitors have been found to increase remissions of acute leukemia in children, and they should always be given a trial. Aminopterin has rather marked toxic side effects. The newer amethopterin is less toxic. The best that can be expected of them, however, is to prolong life and make the child more comfortable.[27]

Antibiotics and Vaccines

In administering penicillin and streptomycin, the intramuscular route is used most frequently.[28] The trend toward larger doses at less frequent intervals is a boon in pediatrics. The oral, topical, and aerosol methods all have their limitations. The intrathecal route is used with caution, if at all, and with small doses only. Main indications according to some authorities, for using this route are severe influenzal or pneumococcic meningitis and tuberculous meningitis.

Streptomycin is the first drug to "dent" the high mortality from miliary tuberculosis and tuberculosis meningitis.[29] The frequent development of resistant strains and the toxic effects impose limitations upon its use in such chronic disease.

Other uses of streptomycin are in influenzal meningitis and in influenzal tracheobronchitis.[31,32] In the former it is usually combined with sulfadiazine,[31] and to some extent this treatment has supplanted the use of serum. Administration of large doses of streptomycin for a short while with continuation of sulfadiazine for a longer period may obviate the development of strains of the organisms resistant to streptomycin. In severe laryngotracheobronchitis of infants, streptomycin is so successful where H. influenzae is the cause, that it has been recommended in all cases until throat culture demonstrates some other organism.[32]

Since sulfonamides, penicillin, and streptomycin act by different mechanisms and do not interfere with one another, combinations may be more effective than one alone, and smaller doses of each may be used.

Aureomycin and chloromycetin will have as broad application in children as in adults. Aureomycin gives striking results in the treatment of pancreatic fibrosis, in which it causes more improvement in pulmonary lesions than does penicillin aerosol, the present treatment.[33] Influenzal meningitis is also benefited by aureomycin.[34]

Pertussis is benefited by streptomycin, aureomycin, and chloromycetin, so that a battery of drugs has now become available for a disease for which there had been little previous effective treatment, except for complications.

There is increased interest in the use of BCG vaccination against tuberculosis, especially in Europe. In the United States, experimental observations favor its use in restricted categories of persons, including Indian newborn infants vaccinated at several days of age.[38,39] Use of the vaccine is advised where tuberculin negative persons are likely to be exposed to tuberculosis. The concensus is that it is entirely safe.

Child Health Services

Results of the first nationwide study of child health services and pediatric education in the United States have recently been made public by the American Academy of Pediatrics. Through the cooperative efforts of the Academy, the U. S. Public Health Service, the Children's Bureau, practicing physicians, hospitals, medical schools, and community health services, we now have the first complete picture of the state of our child health facilities.[40]

There are two outstanding facts: (1) there is need for more physicians who are well-trained in the care of children, both general practitioners and specialists, with more instruction in normal growth and development of the child and in preventive aspects of child care; (2) the high quality of medical care in and near medical centers is not available in remote and rural areas.

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CONFERENCE ON CHILDREN AND YOUTH

The White House in Washington will be the scene late this year of several sessions of the largest and most important conference on children's problems ever held. The gathering is the Midcentury White House Conference on Children and Youth. It will begin its work in December 1950, bringing together thousands of the foremost experts on the various problems of children from all parts of the United States, and from many foreign countries. The purpose of the meeting is to consider methods of developing in children the mental, emotional and spiritual qualities essential to individual happiness and to responsible citizenship, and of determining what physical, economic, and social conditions are necessary to this development. Four previous White House Conferences, one in each decade of this century, were held, and each produced important results, such as the creation of a Children's Bureau in the American Government, the control of child labour and the improvement of progressive education. (UNESCO)

THE PROBLEM CLINIC

QUESTION:

How Can a Doctor Make a Good Witness?

ANSWER BY: **Grace B. Stiles**

I DO NOT PARTICULARLY like the wording of this subject assigned to me. It implies that, up to now, doctors have made poor witnesses and that I am going to undertake to tell them how to become good ones. Were that necessary, I should not feel competent, but I assure you it is not necessary. My observation has been that doctors make extremely good witnesses. I realize, however, that I am expected to give a few suggestions, based upon my experience as a trial attorney, for whatever aid they may be to those of you who may have to appear in Court as witnesses.

If what I say seems based primarily upon criminal jury trials, please remember that my work as Assistant United States Attorney for the District of Columbia has been in the criminal division exclusively for the past six years. The five years preceding were spent in the civil division, where most of the trial work is non-jury, that is, where the Court decides all questions of fact as well as law. Because of his wisdom and experience, the conduct of a witness upon the witness stand does not affect the decision of the Court sitting in a non-jury case as it does a jury of twelve men and women composed of a cross-section of lay-citizens. Therefore, my remarks are directed for the most part to how to make a good witness from the juror's point of view.

There are no set rules as to what makes a good witness, but a few general suggestions as to how any witness can be helpful to the Court and jury will apply to the doctor also. Some of the principal qualifications for a good witness are honesty, sincerity, intelligence, pleasing personality, good manners, nice appearence, a straightforward demeanor, attentiveness, terseness, and courage.

By courage, I mean the determination not to be brow-beaten, either in the manner the term implies or by clever leading on the part of opposing counsel, from what you know to be the truth. By terseness, I mean the quality of answering briefly, concisely, and succinctly the questions put to you by counsel or the Court, and not volunteering information beyond the question asked. Do not be afraid to answer by a simple "yes" or "no," if the question requires such an answer; and do not be afraid to say "I don't know" if you don't. That sounds like a useless adomonition probably, but you have no idea how hard it is for most witnesses to give these answers. Always remember it is the responsibility of counsel to bring out the facts they want placed before the jury and if you volunteer information it may prove to be something that will confuse rather than aid. The quality of attentiveness will aid you here. If a witness will listen carefully to the question he is asked and will answer only what he is asked, there is no danger of his making a voluntary statement that may get him, and the side which has called him as a witness, into hot water.

I believe the two most important qualifications for a witness are honesty and sincerity. I have seen many a witness of practically no intelligence, poor personality, and shabby appearance, whose honesty and sincerity shone so brightly that nobody could doubt a word he said. I think the next in importance, in its effect upon a jury, is the demeanor of a witness. A jury is quick to notice any affectation of manner or voice, and to resent it. The good will of the jury is best attained by a natural, unstilted, straightforward demeanor.

Mrs. Stiles is Assistant United States Attorney and has been admitted to practice before the Supreme Court of the United States. This article is reprinted by request from the May, 1949, JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION.

In testifying, a witness should direct his or her answer to the attorney who has asked the question, speaking clearly and distinctly so that the jury, which is on one side of him, and the judge, on the other, may hear what he is saying. Of course, if the judge asks a question, the witness should turn his head and face toward the judge when answering, even though, by so doing, his head may be turned away from the jury. However, if he speaks clearly enough the jury will hear, and if the judge wishes him to turn toward the jury he will say so. Of course, there may be times when either the judge or examining counsel will direct the witness to tell the jury what happened, in which event the witness should turn his head toward the jury and address it until he has completed what he was directed to tell and then turn his head back to the person interrogating him. All of this, you will note, is just plain good manners, but you would be surprised how many witnesses will plant themselves in the witness chair, cross their legs, turn one shoulder to the judge and beam out at the jury with the air of "Well, counselor, start the inquisition. I'll mow 'em down." Right there, he is off on the wrong foot with the jury.

A witness should always be as polite and courteous in answering questions put to him on cross-examination by counsel for the other side as he is in answering those of counsel who called him to testify. Do not let your feathers get ruffled if opposing counsel does not seem quite as polite and courteous to you as counsel for your side. The chances are he is needling you for the express purpose of getting you angry. Keep your dignity and courteous manner, even if he appears downright rude to you. Nothing pleases a lawyer more than to get a witness for the other side irritated, and nothing makes him sicker than to see one of his own witnesses succumb to that emotion, for once a witness loses his temper he is likely to get reckless in his answers, or get smart and say things that are clever only in his own mind. The ideal witness is calm, composed, and courteous to all persons alike; he is serious in his manner, because trials are serious things, but he should not be above smiling even at his own expense if everybody else smiles, particularly the judge.

One cross-examination question that every witness ought to know about ahead of time is this one: "Have you talked this case over with anyone before you testified here today?" It is amazing how most witnesses fall before this question. They seem to think it is some kind of a crime to have discussed the case, even with the lawyer who has called them to testify. They will look scared, hesitate, and say, almost invariably: "No, nobody at all." Now everybody on the jury knows that the chances are that is not true, and the attorney who asked the question knows that they know it, and, from that, he builds his argument to the jury that they cannot believe this witness in anything he has said because they must know the attorney had talked the case over with him. I believe that many times a witness feels that counsel is implying that he talked the matter over with someone who told him how to testify, but that is not what he was asked. So here, strict adherence to the answer called for would have kept him out of trouble. Anyway, the attorney for your side can clear that point up if he thinks such an implication has been put over to the jury.

With regard to talking over the case, there is one point that it might be helpful to pass on here, for sometimes a lack of knowledge of it cause complications. When the trial is started, witnesses are, as a rule, excluded from the court room, particularly in a criminal case, and called in, one by one, to testify. After testifying, a witness is directed to sit in the court room. If a recess is declared in the trial, for lunch or over night, before the other witnesses have testified, the witness who has testified should not talk with those who have not yet been called to testifiy about what transpired in the court room when he testified. Any communication between such witnesses if observed by opposing counsel may result in a complaint to the court and, at the least, cause the witnesses to be reprimanded.

One other point that I feel I hardly need bring to your attention is that a witness should never say anything to a juror or let a juror say anything to him, during the course of the trial.

Getting down more specifically to my subject—How can a doctor make a good witness?—I might say, first, that he needs less advice than any other witness. He comes in a professional capacity, has no interest beyond giving to the Court and jury the benefit of the facts he happens to have in connection with the case, and, because of his training, usually he has all the prerequisites of a good witness.

There are just one or two suggestions, which I hope will be taken in the spirit in which I bring them. As a prosecutor of felonies, involving anything from stolen automobiles to first degree murder, I have sat at the counsel table since I have been assigned to criminal work, practically day in and day out, and watched the reactions of juries to witnesses, so what I am giving are my impressions, for what they may be worth. Other lawyers may have received different impressions.

Nobody yet has been able to fathom the composite mind of a jury, but one thing I have become convinced of, and that is that juries in the District of Columbia cannot be kidded, and they are pretty hard to impress with anything but truth and facts. Important people as witnesses do not impress them. Like all of us who live in the District of Columbia, they live so close to important personages that they have become blasé.

So, when you come, a woman from the field of medicine, deserving of the highest credit for your attainments, to testify as a witness in court, I beg of you do not feel important. You are out of the sick room and hospital where you rank supreme and are in another field where you are just one of the little cogs in the wheels of justice —one of the characters in the picture that is unfolding before the really important people of the moment, the jury. Remember that, on that jury, in addition to business men and women, civic-minded housewives, and the best brains from the Government departments, there are also the janitors, the laundresses, the garage handymen, and the mousey little housewives who are allowed to have no opinions beyond those of their husbands; . . . even the least of these is not going to be looked down the nose at by anybody. And that is the way it should be. They are the sole judges of the facts; they observe the demeanor of the witnesses on the witness stand; they determine whether you are biased or prejudiced; whether you are telling the truth, or are honestly mistaken; whether you have an interest in the outcome of the case which may color your testimony. They are the important people.

Do not fail to be perfectly frank and honest. Professional people start off, by reason of their professional knowledge, with the deserved respect of the jury, and for that reason are treated with the highest regard of any witnesses by counsel. However, if opposing counsel ever finds that you have overstepped your knowledge and experience, in your zeal to appear authoritative on the subject in question, he will be upon you like a tiger in an effort to discredit you as a witness. The bigger the witness, the harder he falls when he is discredited in the eyes of the jury.

Every consideration is given doctors when they are called as witnesses. In the criminal courts, witnesses are subpoenaed for 9:00 A.M. and must check in between that time and 9:30 A.M. when the judge of the assignment court comes on the bench. If they are not there by 9:30 and the records shows that their notice to appear was served upon them personally, an attachment is issued and a deputy United States Marshall is sent out to bring them in. In spite of this system, which is absolutely necessary in order for the courts to function properly, witnesses of the medical profession are usually permitted to be placed on telephone call so that their time may not be taken by the courts unnecessarily. This is a concession to the importance of the doctor's work elsewhere, and is a courtesy that he should appreciate and cooperate in. By cooperating, I mean that when you, as a medical witness, are told to remain on telephone call, you should never be out of reach, by telephone, of the particular official of the court with whom you have made arrangements to be on call. If you do get out of reach, you may upset the whole machinery of the court, as, for instance, when all other witnesses may have been called and there are no others than yourself to testify, and if you can not be located it may become necessary to recess the trial until you arrive. Of course, the court may compel the attorney who has called you to proceed without you, which may completely destroy his chances of winning the case, and the court has been known to take this step on occasion. The orderly procedure of justice must be respected even by doctors. Fortunately, doctors do appreciate this courtesy shown them and do not often place themselves in a position to be criticized by the court. A doctor's testimony is usually taken when he arrives, and he is excused thereafter, if he desires, even though it may mean letting him testify out of the usual order.

Another suggestion I would like to get over is this. Be ready, and willing, to put into simple words a statement which you have just made in medical terms. Do it graciously and not condescendingly. Remember that probably nobody in the court room but you, and possibly the judge out of his experience, knows what you are talking about if you do not explain it. After all, you are there to help the jury reach a just decision and not to exploit your knowledge of medical terms. I do not mean that you should not first state the symptoms or condition you are describing in proper medical terms. If you do not possibly you may be accused, like a local judge once was, of not knowing the language of your profession sufficiently to express yourself in it. Personally, I thought the criticism of the judge was a compliment, for I have never seen why any of us should fail to express ourselves to others in a manner they can understand. We may use legal or medical language to express ourselves to our professional associates but should translate it to every day words when we are talking with laymen who have not studied our professional language.

Express yourself first in the proper medical terms. The judge may know more about medicine than you think and the lawyers may have read some medical books and know what you are talking about. This situation often exists in civil trials where there is no jury and what you say has only to be considered by the court and counsel. But, where there is a jury, you will nearly always be asked to explain your statement in simple language. It always seems nice to me when a doctor handles it something like this: "The man was suffering from thrombosis of the internal carotid artery—which means, in non-medical terms, that he had a clot in the artery behind the ear which supplies the blood to the brain;" or "I treated her for dermatitis venenata—which is a skin rash or soreness of the skin."

It is much easier for a lawyer to argue medical testimony to the jury if he can do it in the plain every day language they all understand and which can be used more forcefully than medical terms. An instance which I always recall in connection with this point occurred several years ago when I was trying a very bad case of assault with a dangerous weapon. The defendant had cut and beaten the complainant unmercifully, so that when he was taken to the hospital he was not expected to live. However, he pulled through and the defendant, by the grace of God and good medical attention, was being tried only for assault with a dangerous weapon instead of the more serious crime of homicide. When I called to the witness stand the doctor who had received the complainant at the hospital, I wanted his testimony to show just how nearly dead the victim was as a result of the defendant's attack. I asked the usual questions and the doctor, refreshing his recollection from the hospital records, droned out, in high sounding medical terms, the complainant's physical condition when he arrived at the hospital. Then he sat back with the air of "that's it." Well, it was not enough for my purposes. It had not sounded bad at all in medical language, not nearly bad enough to me who knew how bad it really was and who needed the doctor to corroborate the complainant's testimony of the viciousness of the attack. I knew that, as far as impressing the jury was concerned, I might as well have left that doctor at the hospital. But I did not give up. I looked up at the doctor and said very meekly: "Doctor, could you put all that into simple words that the jury and I might understand?" He looked at me for a moment, sort of pityingly, as though he felt it must be awful to be so ignorant, and then his eyes twinkled and he showed true sportmanship, as he replied: "Well, Mrs. Stiles, I would say that when the complainant was brought to the hospital, he had one foot in the grave." The jury giggled, the judge smiled, and I had the punch line I needed for argument to the jury.

While, up until now, I have been speaking of your appearance in court as an ordinary medical witness, entitled to testify only to facts within your knowledge, there may be occasions when you will be allowed to testify as to your opinion. Then you become an expert witness. Opinion evidence of experts in certain fields is held admissible upon subjects not within the knowledge of all persons of ordinary education and experience—admissible from necessity, under certain circumstances, as the best evidence possible to be obtained for the purpose of aiding the jury in arriving at a decision in the case. This opinion evidence is not accepted as fact. The jury may accept it as correct or may reject it. Expert evidence is, of course, not confined to certain professions but is applicable wherever peculiar skill and judgment are required to explain results. Thus we have experts in medicine, handwriting, fingerprints, fire arms, mechanics, and many other fields.

There is no presumption that a witness is competent to give an opinion, and so his competency must be shown to the court's satisfaction. The court hears the qualifications of the witness and then determines whether he has met the test. There is no fixed test; it all depends upon the subject and the particular witness. Both attorneys and the court may ask questions as to the experience and education of the witness along the line in which it is sought to show that he is an expert. Here, as when you are a general medical witness, you should keep within the bounds of your field. Always keep in mind that opposing counsel may have read some medical textbooks, by some well known authority, on the subject in question, and be ready to trip you up. If he succeeds in doing this only once, your stock will take a tailspin with the jury.

In conclusion, I would like to repeat that there is no exact formula for being a good witness. We lawyers, who should know how to make the best ones, often make the poorest. Paraphrasing Mr. Shakespeare: It's easier to tell others how to testify than to follow our own teaching. My advice is simply this: Be yourself, and remember your oath to tell the truth, the whole truth, and nothing but the truth.

Medical Women in Italy

Mara Palazzoli Selvini, M.D.

In a country such as ours—with so ancient a civilization—it is extremely difficult to answer offhand the question, "When did the first woman doctor appear upon the scene in Italy?" But the magnificent illuminated codices which are to be found in many Italian museums, in the National Library of Paris, and in the British Museum in London cause us to turn immediately to the Medical School of Salerno, the oldest university in Europe, and to the Studio Medico of Bologna, for the answer. There, will be found information about women who, even so early as the eleventh century, were allowed not only to practice but also to teach the science of medicine. The earliest and most famous of these women is Trotula, who lived in Salerno, and to whom a treatise on medicaments and some writings on obstetrics and gynecology have been attributed.

From the very beginning of its existence, in the thirteenth century, the Studio Medico of Bologna admitted women, both as students and as teachers. In the eighteenth century, a woman, Anna Morandi Manzolini, had the chair of Ordinary Professor of Anatomy at Bologna and gave frequent courses, the excellency of which, it was said, far surpassed the work of her men colleagues. The records of her career are associated with a series of anatomical sets executed by her in wax, which are still preserved in the Museum of Anatomy of Bologna University.

In Italy, women have always been admitted to the faculties of medicine and have always had access to the hospitals, the clinics, and the laboratories. Although up until fifty years ago the medical profession was open to only women of exceptional character and ability, while the majority turned to the faculties of arts and philosophy to complete their education, during the past twenty years the preference on the part of women for the medical profession has grown steadily.

ANNA MORANDI MANZOLINI, M.D.*
Professor of Anatomy at Bologna

Of the students registered at the Faculty of Medicine of Milan University during the academic years from 1942 to 1947, approximately 15 percent were women. About 10 percent of these women completed their studies and graduated. The number of women taking degrees in medicine has continued to increase, not only in actual num-

*(*Photograph of wax bust made by Professor Manzolini, by courtesy of Ciba Pharmaceutical Company.*)

bers (which could be accounted for by the increased number of all students at the universities today) but also in the percentage of women among medical students. Moreover, prejudice against women as physicians is steadily disappearing and, particularly in the case of certain specialties, esteem for and confidence in the medical woman continue to grow apace. The number of women practicing in Italy (i.e., those whose names appear on the medical register as duly qualified) is now 1,200. This is out of a total of 35,000 physicians in the country. These medical women are, however, unevenly distributed throughout the various provinces of Italy. The number is greater in Northern and Central Italy than in the South. In Milan, for instance, the number of women in practice makes up 4.3 percent of the total number of doctors; in Genoa they form 4 percent; in Rome, 4.2 percent; in Naples, 1.6 percent. In the specialized branches of the profession, women are more or less evenly distributed throughout the country. Pediatrics claims the largest number of women doctors, who devote themselves in particular to social medicine and the prevention of sickness during childhood. Next on the list come the specialists in internal medicine and those who work as general practitioners, without any diploma of specialization. A considerably smaller number specialize in ophthalmology, surgery, otolaryngology, and dermatology. Contrary to the custom in other countries, few medical women in Italy specialize in obstetrics and gynecology. In the Milan provinces, for instance, of a total of 3,750 doctors, 165 are women; of these 35 are pediatricians; 23 devote themselves to school and social medicine; 12 are engaged in laboratory work; 8 are neuropsychiatrists; 4 are physiologists; 3 are radiologists; 3 are odontologists; 2 are surgeons; and 26 are registered but do not practice.

Formerly, women were excluded, by a special clause, from holding the posts (which are selective) of director and vice-director of some hospitals. As the result, however, of efforts made by our Association to alter this situation, these clauses have now been abolished.

Equal opportunities to embrace a university career are offered to men and women. In Italy, however, as in France, few women make the most of these opportunities, because few of them are ready to dedicate their entire time and energies to hospital and laboratory work. Nevertheless, a number of them hold posts as assistant lecturers, especially in the purely theoretical branches, and allocation to posts as university professors without a chair is moderately frequent. Only one woman at present holds the position of Ordinary University Professor. She is Angela Borrino, Professor of Pediatrics at the University of Perugia. In several other university posts women deputize (e.g., in the Histology section of the University of Milan; in the section of General Pathology of Pavia University; and in the section of Biology at the Catholic University of Milan).

ANGELA BORRINO, M.D.
Professor of Pediatrics at Perugia

In the field of missionary medicine, also, Italian medical women play an important part. One of our members, Dr. Raffaella Scolletta of Turin, who has specialized in obstetrics and gynecology, is at present setting up a department of obstetrics and gynecology in the Hospital of the Jesuit Fathers at Marikunnu, India. For the last fifteen years two other women doctors have been working there.

One of the principal aims of our Association is to help and encourage our young colleagues to devote their energies to the problems of social medicine, which are, we consider, the most suitable ones for medical women and are those upon which their particular gifts, bestowed by nature, can be used to best advantage.

MEDICAL PRACTICE AROUND THE WORLD

A Medical Outpost in the Land of the Midnight Sun

Karoline Mathisen, M.D.

AS I SIT HERE in my office in a small town up north close to the Arctic Ocean, in the neighborhood of a central hospital where several specialities are represented and with many modern remedies, I recall with a feeling of sadness my early years as a doctor. I was first a substitute for the local medical officer in a large sea and valley district far up north, and then at an island, Yttre Senja, where the only communication was by boat.

In Norway women doctors have only to a small extent sought to become local health officers. They practice chiefly in the large cities, some as general practitioners, some as specialists. This is advantageous from a medical point of view; but to me it seems harder to be in my office all day long and then make calls in my car. I miss the quietness of nature on long journeys, the constant changes in the lights, and even the roar of the storm and the fury and the power of nature.

When I started up north after having just passed my medical examination, I was fortunate to have had some training as an intern. This gave me knowledge and experience which was of infinite benefit when I found myself the only doctor for more than 6,000 people, in an enormous district with unbelievable distances to cover, both on shore and sea.

Though born up north it was a new experience to me to see the thousands of small poor homes and to meet people living under such primitive conditions as I had not even dreamt of. It was good for me personally to learn how people worked hard and fought to obtain the simplest things, and how little it took to make a cosy home; how these people loved their large crowds of children; and how grateful they were for help. They found it strange, though, to have a woman doctor—and perhaps not so safe as to have a man. It was also a drawback to me to admit that I too was born up north. It would have been more glorious to have been from Oslo or another place far away, and would perhaps have added to my prestige.

Dr. Mathisen is in practice in Tromso, Norway.

Superstition was naturally great in this populous district with so little opportunity for medical help. Infections and blood poisoning were blown away by so-called blowers, who enjoyed a high reputation. Burns were made to cure neuralgia; but the permanent scars which nearly everyone had looked bad. Finally there was also a kind of stasis treatment; with their lips they sucked large blue areas on the skin over the infected organs. This had been done with one of my patients, living far away in a small valley who was attacked by double pneumonia. When I saw him, he had blue areas over the greater part of his chest. Fortunately, I had with me some camphor and digitalis, and I gave exact instructions about how much to give and when a fall in temperature could be expected, if the patient survived the disease. I myself had to hasten to make another call in my large district. The temperature fell on just the day I had predicted, and this gave me a good and unexpected reputation among the patient's neighbors:

I had to travel constantly. Many times I came home from the doctor's boat at 3:00 or 4:00 o'clock in the morning, and found a horse-drawn conveyance waiting to take me to a difficult delivery. I had perhaps hours of traveling in a sheepskin coat in sparkling cold which nearly made the breath freeze. Tired and stiff I would totter in to the patient. I rapidly got used to examining a patient surrounded by all the family. Most houses had only one room and it would have been merciless to force them out in the cold,

the more so because they were all so interested in the doctor's doings and devoured every moment and every word.

The communities were poor, most of them went into bankruptcy later on, and it was difficult to get even seriously sick people to the hospital. The hospital in Tromsö was always overcrowded and an exact diagnosis was required even in emergencies. The only thing I did was to help as well as I could, and I was many times thankful for the systematic and solid clinical teaching we had been given during our study.

I had to set shoulders, hips, and jaws in place. Once I even had to operate on a seventy-eight year old woman with an incarcerated hernia, as she lay on two margarine boxes. I was assisted by two country women and they had certainly never before held a narcosis mask or an instrument in their hands. To my great astonishment the old patient survived and enjoyed a long period of life afterwards.

My deepest admiration was felt for all the hard-working and wornout women who labored happily from morning till night, from youth to old age, under the poorest conditions, and without even the slightest trace of material comforts. It was plain to see that the standard of living is not the same as the standard of happiness. These people of mixed origin were glad and childlike even under great adversities and economic problems. More than once I wondered if they really had any joy in their lives.

Of course it was not in any sense satisfactory medical service that I could offer with such remedies as were at my disposal after traveling miles to make a call and having perhaps only a few minutes for examination and treatment. I had to make the best of it and hope not to make too many mistakes.

From the deep fjords and the long valleys in Lyngen I moved to the most extreme sea rocks in Senja, where the Arctic Ocean beat cold and powerful on the steep rocks. On the outer side of the islands there were many deep fjords where people had settled down in small inlets, a few houses making a community. Life here was plain sport to me, dressed in a sheepskin coat from morning till night with no office practice, as there were no communications or roads.

I went in the doctor's boat, a 46-foot fishing boat, out on the wild ocean, round one of the many forelands that separated the fjords. It was an exciting adventure when the sea was high and beat the foam brown against the rocks. It would have been certain death if the motor had failed at a critical moment. I felt small under this force of nature when the cutter went down in the trough of the sea and we couldn't see land, or when the motor raced free on the wave crests.

Senja

One of the main difficulties in my district was the question of hospitalization. We had no ward in the whole district and the journey to the hospital in Tromsö was long and expensive. It was medically unsatisfactory to leave sick patients and not even be able to telephone them later. Telephones were lacking over the greater part of the district. It was again an experience for me to see the hard struggle for existence here, the courage and manhood of these people living next to the ocean. They preferred the sea to asphalt streets. The stormbeaten ocean, at which landfolk pale with fright is their proper element and their whole means of livelihood.

Norway has a long and hard coast and the farther up north one goes the more weatherbeaten one finds the country; but here and there in between are small inlets, where a little house tells that a family has settled down and is making a living.

There has been discussion of moving the people living in the outposts to centers where they could have access to hospitals, schools, and other social benefits. Probably we would do them wrong. These people living in the outposts love their independence more than their standard of living. They have added a province to our country and without them the centers would also be poorer.

Opportunities for Women in Medicine

HOSPITAL ADMINISTRATION

THE FIELD of hospital administration should be of vital interest to women physicians who are interested in the executive branch of medicine. It certainly warrants a place among the professions. An accumulated store of knowledge, such as one gains in medicine, is of primary importance in directing a hospital.

The majority of hospitals at present are directed by lay people and nurses. A medical director should prove to be more satisfactory in all ways because of superior training and ability to condense and organize, and should be the perfect liaison between a medical staff and the board of managers and trustees. Too many times a physician will go to a hospital administrator with a problem only to learn that the director has no conception of the medical problem and thus either has no sympathy with the physician or is unable to state the situation to the board of managers, which eventually leads to friction. In the future, more hospitals will demand medical directors who are trained in hospital administration.

Dr. Bachmeyer of Chicago, Father Schwitalle of St. Louis, and Dr. MacEachern of Northwestern are pioneers in the field of hospital administration. Their efforts have been reinforced by a series of new training programs. These have been established in part by the Joint Commission on Education, which is represented by the American College of Hospital Administrators and the American Hospital Association. The W. K. Kellogg Foundation, sponsor of the Commission, has helped to make new training courses available. Columbia University, Washington, University, University of Minnesota, Yale University, and the University of California, along with Johns Hopkins University, and the University of Toronto are all now offering courses in hospital administration which lead to a degree in that field.

Each of these institutions requires a year of residence study followed by a year of supervised internship in a hospital. All require graduate standing for entrance. At the University of California, courses such as Hospital Organization and Management; Public Health Statistics; Principles of Public Health Organization and Administration; and Seminars in Hospital Administration are given in the first semester. During the second semester Hospital Organization and Management; Environmental Sanitation; Directed Group Study (Epidemiology and Communicable Disease Control); Principles of Public Health Organization and Administration; and Seminars in Hospital Administration and Medical Care Administration are given to the student.

The administrator can make a great contribution to the profession by providing a good internship to those people who have completed their university training. The person coming to study with a hospital executive represents the best training efforts of outstanding administrators. He has had his year's study, field work, observation, and investigations; and his perspective has been broadened through public health work, preventive medicine, and new trends in medical care.

The candidate has had to survive two screening procedures, taking into consideration personality, job experience, responsibility, maturity, and aptitude. In nominating him to serve as an intern, the counsellors at the center have reviewed his qualifications and have decided he represents a good prospect.

Training in the administrative office should constitute 50 percent of the year's assignment. He should act as host for hospital visitors, attend management committee meetings and conferences to make summary notes, investigate all accidents or unusual occurrences, and prepare reports. He should hold conferences with patients making complaints, investigate and recommend answers to patients presenting similar complaints. He should make rounds with the night supervisor, periodically learning special pharmacy needs. He should investigate patients proposing to leave against advice, transfers to other hospitals, and difficulties with or between patients and employees.

The intern should learn how a patient is admitted, interview patients to determine financial responsibility, and confer with social agencies when necessary. He must learn how to deal with the personnel problems, the business office, and the outpatient department. It is necessary to understand and handle details pertinent to dismissal of patients, including routine methods incident to deaths. The intern should make rounds with the nursing supervisor and check records on

narcotic supply. A time should be set aside to study how the medical record room is run and to learn how to obtain records in emergencies and also something of the legal aspects encountered in medical records.

In the purchasing and store departments, his duties should include obtaining full specifications on approved purchase requisitions, determining sources of supply, and procuring quotations by telephone and correspondence; meeting salesmen in purchasing specifications, and making spot checks in the stores to verify inventories and to supervise cleanliness. The intern must know how to receive work orders in engineering and maintenance departments and be able to inspect work done and check job progress. The laundry department work schedules and operations, replacement possibilities to decrease cost and increase services, and many other details are of great importance to the intern.

The administrator of the hospital must see that the intern attends board meetings and takes note of action; assists in preparation of departmental budgets; reviews monthly budget reports and collects material for the annual report. The intern should participate in public relations activitives, review current statistical reports of departmental heads, and prepare memoranda as a basis of questions to be raised by the administration. At the end of the year an evaluation is made of the intern's ability to deal with hospital, medical, and management plans, and after personal habits and responsibilities are taken into consideration, a report is sent to his university.

It is not possible to become a seasoned administrator in such a brief time, but it is up to the individual to continue his studies to make a good hospital executive. When one considers that the annual entrants number only between one hundred and one hundred fifty, and that natural vacancies, deaths, withdrawals, and retirements are constantly occurring, hospital administration is definitely becoming a profession.

A few women are pioneering in this field. Dr. Hilda Kroeger is Assistant Director of Grace-New Haven Hospital at New Haven, Connecticut. A communication from Professor of Hospital Administration, James A. Hamilton, at the University of Minnesota, gives additional data. He reports that in Health Administration at Minnesota is Dr. Ruth Boynton, and states that under the Hill-Burton Act for the granting of funds for construction of hospitals, various states have created hospital authorities where the administrative chief is a medical woman. Two such are Dr. Helen Knudsen, State of Minnesota, and Dr. Martha O'Malley, State of Indiana.

If the field of hospital administration appeals to any of our young women physicians, definite information may be obtained by writing directly to one of the universities mentioned earlier in this paper. The financial remuneration varies with the size of the institution and its character, but most of them pay salaries ranging from $5,000 to $20,000 per annum.

In summing up the advantages of entering the field of hospital administration, one must consider the minimum night work, regular hours, opportunity and ability to deal with the full range of the medical profession of both sexes, with suitable rewards. Although at present few women are engaged in this field, the opportunity is there if one has the courage, determination, and inclination to train oneself suitably. Hospital administration should offer interesting possibilities for a successful career.

Occo Elain Goodwin, M.D.

IMPORTANT ANNOUNCEMENT RE THE YEAR BOOK

Is the listing of your name, address, and type of practice in the 1949 yearbook correct? If not, please fill out the upper half of the membership blank on page 20 in the back advertising section, and mail to the Business Manager, P.O. Box 67, Planetarium Station, New York 24, New York, before January 1, 1951. No changes in, or additions to the directory will be made after December 31, 1950.

FLORENCE RENA SABIN, M.D.

Words can do little more than suggest the unconquerable spirit that has characterized the life and the work of Dr. Florence Rena Sabin, illustrious scientist, crusader, and humanitarian. To her have come an abundance of rich rewards and universal recognition for many notable contributions to medical science and to public health welfare. Twelve colleges have conferred upon her honorary degrees; numerous medals and appointments have been hers; and a number of "firsts" illuminate her remarkable record of accomplishment.

The medical world has long been cognizant of the results of Dr. Sabin's anatomic research and experimental work in tuberculosis; familiar to medical students is her "Atlas of the Medulla and Mid-Brain" (1901). Her publications on the nervous system, the lymphatic system, and the origin of blood cells, and studies on blood and bone marrow are widely known. An illustration of Dr. Sabin's versatile pen is the biography of the late Dr. Franklin Paine Mall (1934).

After graduation from Smith College in 1893, she spent a brief period in teaching mathematics and zoology to earn funds for a medical education. In 1896, she entered Johns Hopkins Medical School and was one of the first women to receive a degree from that institution, four years later. She was appointed to the faculty of Hopkins, the first woman so chosen, and remained on the staff until 1925 when she resigned as Professor of Histology to devote her time to the study of blood cells. She then became a member of the Rockfeller Institute for Medical Research, and her untiring and enthusiastic labors soon established her among the able scientists of her era. When the stipulated "retirement age" was reached, Dr. Sabin looked homeward—to Colorado! She was born in Central City and her present home is in Denver.

Dr. Sabin was the first woman to be president of the American Association of Anatomists (1934-1936). In 1943, she was made a director of the American Society for the Control of Cancer, the first woman to be chosen for the Board. She is a member of the National Academy of Science, and in 1939 was made a member of the Board of the Guggenheim Foundation and of the Committee for Research of the National Tuberculosis Society. Her brilliant work was again recognized when she received the Carey Thomas prize award of Bryn Mawr. In 1932, the *Pictorial Review* award was given her for national achievement. In 1948, the Arts and Science award was bestowed upon her by the National Conference of Christians and Jews. In 1949, Dr. Sabin, then Commissioner of Health and Charities, Denver, Colorado, was elected a vice-president of the American Public Health Association.

Retirement was to mean to Dr. Sabin just another period of activity, another field of endeavor that required her unusual ability, idealism, and zeal. Although Colorado was famed far and wide as a "health resort," the death rate from preventable diseases was very high. A shortage of doctors existed and there was no requirement for pasteurization of milk, no cattle inspection, no vaccination. Politically-controlled health agencies were making no effort to remedy the deplorable and dangerous conditions. Setting out with a stout heart and an amazing energy, Dr. Sabin appealed to the Commonwealth Fund, which made a grant to the American Public Health Association for a survey of health conditions in her state. This study unearthed such startling facts that Colorado was aroused. The fight was on!

Dr. Sabin sought the interest and the support of various organizations and individuals, including prominent politicians. She carried her message to the "little people" as well as to the influential

"higher ups." At her own expense she traveled over the state visiting 63 counties, often when weather and road conditions were extremely hazardous. Regardless of the physical strain, she spoke before farmers, housewives, clubwomen, and health associations, not stopping her crusade until the State Legislature finally passed acts that provided preventive health measures. She had actually started a "people's movement," urging organization and stimulating many to work toward improved health standards. Colorado was convinced. The State Health Department was taken out of politics, and the sanitation plans she advocated were adopted.

Dr. Sabin, the scientist and scholar, had become widely known as a crusader. Now at the age of 79 she carries on with unchanging spirit, wearing her honors and fame with innate modesty. She finds time to maintain association with the medical world, to lend wise counsel and sympathetic interest to all causes that make for better health and happiness, and to enjoy a keen interest in art, music, and literature. Ever young in outlook and in spirit she faces the future with courage and optimism.

Retirement? Dr. Sabin has contributed a new meaning to the word.

ELIZABETH BASS, M.D.

FLORENCE RENA SABIN, M.D.

News of Women in Medicine

DR. GONUL BINGOL was elected General Secretary of the Turkish Cancer Research and Control Association. Born in 1915, the daughter of a surgeon dentist, she completed her primary, secondary, and college education in Feyziati Girls' Lycee and passed her classes with honors all through her school life. Entering the University of Istanbul in 1934, she graduated in 1940 and began working as a resident with Dr. E. Frank in the second department of internal diseases at the University of Istanbul. At the present time she is also internist at the General Police Department and Criminology teacher at the Police Institute in Ankara. She is married to a captain surgeon and has a daughter.

In October the Judson Health Center will move to larger quarters at 34 Spring Street, New York City. The center was founded in 1921 by DR. ELEANOR A. CAMPBELL, its general director. Dr. Campbell studied medicine because she wished to devote her life and her income to a medically indigent section of the city. Now in her early seventies, Dr. Campbell supervises the clinic's medical work and herself holds two clinics for school children. In the last twenty-nine years the center has functioned as a physician for 12,000 families who could not afford their own doctors.

DR. SARA COOK has been appointed assistant in the Department of Pediatrics at the University of Maryland Medical School.

DR. DOROTHY CHUAN-YING YANG received the degree, Master of Medical Science, from the New York Medical College, Flower-Fifth Avenue Hospitals. Dr. Yang did her postgraduate work in pediatrics.

DR. CARROL BIRCH was named full professor of Internal Medicine at the University of Illinois College of Medicine. This appointment was announced in July.

DR. CAROLINE PRATT, medical officer in charge

of the Communicable Disease Center in Atlanta, Georgia, is convinced that blood from former malaria victims may be safely used for transfusions under certain conditions. Dr. Pratt has conduced research on both malaria and blood in Georgia and Puerto Rico. She said her research revealed that blood from malaria patients, who have been free of the disease for two years, was "completely safe," if it had been refrigerated for five days. The refrigeration kills the parasites that cause malaria. Dr. Pratt pointed out that blood can be used until it is twenty-one days old at least. A native of California, Dr. Pratt received her M.D. degree from the Washington University in St. Louis. She interned at the University of California Medical Hospital and spent three years at the University Hospital, School of Tropical Medicine, in San Juan, Puerto Rico. Dr. Pratt was Medical Director of the Atlanta Red Cross Blood Center during its first two years.

At the seventh annual business meeting of the American Geriatrics Society, Dr. Elizabeth Mason-Hohl was appointed to both the program and education committees for the year 1950-51.

Dr. Charlotte Del Solar and Dr. Milton J. E. Senn of the Yale University Child Study Center have compiled "Readings on the Psychological Development of Infants and Children." This is an annotated selection of references and should be helpful to anyone interested in the study of child development.

The National Vitamin Foundation has awarded a research grant of $3,500 to Dr. Elaine P. Ralli of the New York University College of Medicine. Dr. Ralli will study vitamin-hormone relationships, using the rat as experimental animal.

Drs. P. O. Mustacchi and Elizabeth Lowenhaupt of the University of California Department of Pathology have described senile changes in the thyroid, based on microscopic studies of cases having no history of clinical or morphologic disease of the gland. The characteristic picture of the thyroid in the aged suggests that in senility changes represent either a physiologic quiescence secondary to diminished demand for thyroxine, or one aspect of the aging process as it affects the entire organism.

Dr. Alice Moore and C. Chester Stock, Memorial Cancer Center, have received a $20,000 grant from the National Cancer Institute of the U. S. Public Health Service for study of the relationship of virus infection to tumor growth.

Dr. Elise Strang L'Esperance, Director of the Kate Depew Strang Cancer Prevention Clinic, was one of the principal speakers at the opening of the James Ewing Hospital for Cancer.

Dr. Rebecca Parrish has received a gold medal from the government of the Philippines in recognition of her long medical service there. The citation is a long parchment with much of Dr. Parrish's record printed thereon.

Research done by physicians at Howard University, Colleges of Medicine and Dentistry, indicates that cortisone and ACTH may be effective against arteriolsclerosis because they facilitate the storage of ascorbic acid in the blood and adrenal gland. The experiments were reported at the American Physiological Society's summer meeting at Ohio State University. The physicians who conducted this research were Drs. W. M. Booker, Frances Dent, S. Greene, et al.

In October, Dr. Anna Samuelson will speak over radio station WBNX, under the auspices of the Bronx County Medical Society. Her talk is entitled: "Cold Weather Effects on your Circulation." Dr. Samuelson is associate physician at Morrisania Hospital, The Bronx, New York.

The first world cardiological congress was held in Paris September 3-9. Dr. Helen B. Taussig of Baltimore presented post-operative case histories of 828 "blue babies" operated on by Dr. Alfred Blalock and his associates from 1941 to 1949. Dr. Taussig also delivered a paper on the "Clinical Diagnosis of Pseudo-truncus Arteriosus." Among the other women physicians who participated in the congress were Dr. Ruth Mathers and her associates of Winnipeg, Canada, who discussed "A Method of Recording the Distribution of the Cardiac Potentials on the Surface of the Thorax." Dr. Frances Gardner of London gave a paper on "Continuous Murmurs of the Cyanotic Congenital Cardiac." Dr. Nadine Dobrovolskaia of Paris, Dr. Camille Lian of Paris, Dr. Grace Roth of Rochester, New York, Dr. Renee Figari of Lima, Peru, were other women physicians who read papers at the congress.

Drs. Eleanor A. Bliss, Patricia T. Warth, and Caroline A. Chandler, of the Johns Hopkins University School of Medicine, discussed "The In Vitro and In Vivo Activity of Terramycin" at the Conference on Terramycin, held at the New York Academy of Science. "The Antimicrobial Action of Terramycin" was related by Drs. Gladys L. Hobby and Tulita F. Lenert of Brooklyn, New York. Drs. Carolyn W. Hammond and C. P. Miller, of the Department of Medicine and The Institute of Radiology and Biophysics, University of Chicago, Chicago, Illinois, read a paper on "The Effect of Terramycin on Post Irradiation Infection in Mice."

Marcelle Bernard, M.D., *News Editor*
635 East 211 St. New York 67, New York

Current Publications of Women in Medicine

Romaine, Adelaide: Cancer Prevention and Detection. J. Am. M. Women's A. **5:** 149-150, April 1950.

Abstracts of the papers presented at the meeting of the Women's Medical Society of New York State, in January, at the New York Infirmary, by the staff of the Strang Cancer Prevention Clinic. The papers covered the establishment of the clinic, the method and extent of examinations, the role of the pathologist, a statistical analysis, the results of chest screening, the treatment of intraepithelial carcinoma of the cervix, and the occurrence and treatment of cancer of the skin.

Percival, Eleanor, and **Campbell, A. D.:** The status of radiation therapy in carcinoma of the cervix. Canad. M. A. J. **62:** 335-338, April 1950.

(From Gynaecological Service, Montreal General Hospital, Montreal.)

A series of 261 cases treated from 1934 to 1943, with radium and deep x-ray therapy, show a 43.2 percent salvage. This is an increase of 16 percent over a similar series treated from 1926 to 1933. Failures, trauma due to radiation, and best prospects for the patient are discussed.

Smith, Mary D.: Extreme leucocytosis occurring in a case of empyema. Glasgow M. J. **31:** 82-85, Feb. 1950.

(From Muirhead Department of Medicine, the University and the Royal Infirmary, Glasgow.)

A case is described in which polymorph leukocytosis was so extreme as to produce a blood picture simulating chronic myeloid leukemia. Possible differentiating factors are discussed and possible etiologic factors are briefly reviewed.

Skillen, Jane: The modern use of antibiotics in the treatment of tuberculosis. M. Woman's J. **57:** 13-15, March 1950.

The effectiveness of various antibiotics is discussed.

Goldwasser, Marian: Health: The first objective of education as promoted by the Health Services Branch of the Los Angeles City Schools. M. Woman's J. **57:** 16-19, 49, March 1950.

General discussion.

Gonzales de Barcenes, Ana America: Congenital anomalies. M. Woman's J. **57:** 23-25, March 1950.

Various congenital anomalies are described and their possible etiology is discussed.

Heinrich, Hadassa: School health in Israel. M. Woman's J. **57:** 31-32, 38, March 1950.

The problem of school health, as regards treatment of children from various countries along with native born children and how this was met, is discussed.

Ruchman, I., and **Dodd, Katharine:** Recovery of herpes simplex virus from the blood of a patient with herpetic rhinitis. J. Lab. & Clin. Med. **35:** 434-439, March 1950.

(From Children's Hospital Research Foundation and Departments of Bacteriology and Pediatrics, University of Cincinnati College of Medicine.)

A strain of herpes simplex virus was recovered from the blood of a boy whose primary lesion was located in the nose. He developed neutralizing antibodies, during convalescence, against his own strain as well as against two known strains of herpes, thus indicating the primary nature of the infection. The method of identification of the strains are discussed.

Campbell, Kate: Clinical management of the premature infant. M. J. Australia, **1:** 253-257, Feb. 25, 1950.

Adequate care of the premature infant demands close observation and accurate attention to detail. A summary in graphic form of the routine care is appended.

Meredith, Barbara: Statistical and public health aspects of prematurity. M. J. Australia, **1:** 258-262, Feb. 25, 1950.

(From Division of Maternal, Infant, and Pre-School Welfare, Department of Health, Victoria.)

Measures are suggested for providing fuller information on prematurity and lowering its incidence and decreasing the mortality rate. Statistics on incidence are given.

Davis, Joyce S., Klingberg, W. G., and **Stowell, R. E.:** Nephrolithiasis and nephrocalcinosis with calcium oxalate crystals in kidneys and bones. J. Pediat. **36:** 323-334, March 1950.

(From Department of Pathology and Pediatrics, Washington University School of Medicine, and St. Louis Children's Hospital.)

A case of nephrocalcinosis of unknown etiology in a boy was followed nine years. The patient died at the age of 12. It is suggested that this patient had an unusual disturbance of calcium oxalate metabolism.

Freeman, P., and **Pryor, Helen B.:** Toxoplasmosis in a nine-year-old girl. J. Pediat. **36:** 365-369, March 1950.

Case Report.

Gollwitzer-Meier, Klothilde: Blood pH and blood-flow during muscular activity. Lancet, **1:** 381-386, March 4, 1950.

(From Department of Pathological Physiology, University of Hamburg.)

The results of experiments on the dog's gastrocnemius muscle in situ with normal circulation intact, are reported.

Steven, Eluned M.: Pure anti-E antibody in the serum of a Rh-positive woman. Lancet, **1:** 447, March 1950.

(From Elsie Inglis Memorial Hospital, Edinburgh.)

Report of a case of icterus gravis with kernicterus in an Rh-positive baby whose parents were both Rh-positive. The cause was a pure anti-E antibody found in the mother's blood.

Tudbury, Patricia B., and **Atkinson, Dorothy W.:** The electrocardiograms of one hundred normal infants and young children. J. Pediat. **36:** 466-481, April 1950.

(From Department of Internal Medicine, Children's Hospital for Women and Children, San Francisco.)

Electrocardiograms of 100 normal children between the ages of 12 hours and 4 years were studied in an attempt to add to the present data accurate measurements of all components of the electrocardiogram for these ages. The findings are given, and discussed.

Cummins, H., Talley, Carolynn, and **Platou, R. V.:** Palmar dermatoglyphics in mongolism. Pediatrics, **5:** 241-248, Feb. 1950.

(From Departments of Anatomy and Pediatrics, Tulane University School of Medicine, and Charity Hospital of Louisiana, New Orleans, La.)

Characteristic dermatoglyphic changes rank high in frequency among the variable stigmata of the syndrome of mongolism. A series of five prints are reproduced with description of the technique for reproduction of such. The findings are in keeping with the suggestion that factors responsible for the occurrence of mongolism are operative prior to the third month of fetal life.

Baumgartner, Leona, and **Pessin, V.:** Current problems in deaths of persons under 20 years of age; as evidenced by a study of the situation in the past decade in New York City. Pediatrics, **5:** 257-266, Feb. 1950.

(From Department of Health of the City of New York, New York Hospital, and Department of Pediatrics, Cornell University Medical College, New York.)

Mortality rates for persons under 20 have declined less rapidly than in the previous decades. The reductions in mortality rates along the various lines are listed and discussed, and future lines of research are discussed.

Chandler, Caroline A., and **Hodes, H. L.:** Aureomycin in the treatment of experimental and clinical infections with H. influenzae, type B. Pediatrics, **5:** 267-275, Feb. 1950.

(From Departments of Preventive Medicine and Pediatrics, The Johns Hopkins University School of Medicine, and Sydenham Hospital, Baltimore City Health Department, Baltimore.)

Aureomycin in doses of 20 mg./kg. body weight was as effective in the treatment of mice infected with H. influenzae, type B, as streptomycin and dihydrostreptomycin, and more effective than polymyxin or Q-19. Two infants with H. influenzae, type B, meningitis were treated successfully with aureomycin and sulfadiazine. Three children were treated with aureomycin alone and recovered though more slowly. A sixth patient desperately ill on admission died in spite of treatment.

Mazursky, M.M., Wright, Lydia, and Weichsel, M.: Clinical observations on the use of aureomycin in varicella. Pediatrics, **5:** 276-279, Feb. 1950.

(From Willard Parker Hospital, New York.)

Eighty-two patients between the ages of 6 months and 12 years were seen when rash was of less than 24 hours' duration with no lesions in crust or scab stage. They were followed daily for 6 days. Of these, 41 received aureomycin orally and 41 served as controls. Aureomycin had no effect on the cases treated.

Lincoln, Edith, and Kirmse, T. W.: Chemotherapy of tuberculosis in children. Pediatrics, **5:** 280-295, Feb. 1950.

(From Chest Clinic of Children's Medical Service, Bellevue Hospital, and Department of Pediatrics, New York University, New York.)

Streptomycin is the most effective tuberculostatic agent but is unsuitable for prolonged therapy because of its potential toxicity. The results of treatment of ten children with miliary tuberculosis with combined therapy and 18 cases of tuberculous meningitis with streptomycin are given.

Shirley, H. F., Layman, Mary H., Clancy, J. F., and Limper, Margaret A.: Parent-child relationship in the emotional development of the child. Pediatrics, **5:** 296-318, Feb. 1950.

Round-table discussion at Annual Meeting of American Academy of Pediatrics, November 1949.

Maroney, Margaret, and Rantz, L. A.: Electrocardiogram in 679 healthy infants and children. Pediatrics, **5:**396-407, March 1950.

(From Departments of Pediatrics and Medicine, Stanford University School of Medicine, San Francisco.)

This study was undertaken to fill in the gaps in essential clinical knowledge as regards the cardiac impulse in adults and children. The results are discussed.

Alexander, Hattie E., Mac Pherson, C., and Redman, W.: Quantitative method for measuring H. pertussis antibody. Pediatrics, **5:** 443-447, March 1950.

(From Babies Hospital and Department of Pediatrics, Columbia University College of Physicians and Surgeons, New York.)

A quantitative chemical method which determines the agglutin nitrogen content was shown to be applicable to H. pertussis therapeutic antisera. A simple slide agglutination test is offered as a procedure for determining the degree of antibody excess in the sera of patients after serum therapy.

McMorrow, Kathryn J., and Top, F. H.: Treatment of hemophilus influenzae b meningitis. Report of 67 cases. Pediatrics, **5:** 452-457, March 1950.

(From Detroit Department of Health, Department of Preventive Medicine, Wayne University College of Medicine, and Herman Kiefer Hospital, Detroit.)

Death occurred in 4 patients, first treated at the end of the third week of illness. Prognosis is likely to be unfavorable in the age group under 2 years if treatment is delayed beyond the 14th day. Serotherapy proved ineffectual in the age group under 2 years. The treatment consisted of sulfadiazine and streptomycin, sulfadiazine only, no specific therapy, sulfadiazine and serum, and sulfadiazine, serum and streptomycin.

Barness, L. A., **Moll, Gretchen H.,** and Janeway, C. A.: Nephrotic syndrome. I. Natural history of the disease. Pediatrics, **5:** 486-503, March 1950.

(From Department of Pediatrics, Harvard Medical School, and The Children's Medical Center, Boston.)

Records of 208 patients with the nephrotic syndrome seen in Children's and Infants' Hospitals of Boston from 1926 to 1948 were reviewed.

Mullins, W. L., Helz, Mary K., et al.: The treatment of acute coronary occlusion with anticoagulants. Pennsylvania M. J. **53:** 245-247, March 1950.

(From Heart Station, Mercy Hospital, Pittsburgh, and School of Medicine, University of Pittsburgh.)

Authors believe use of anticoagulants to be a valuable therapeutic measure. Results with 170 patients are reported.

Dolgopol, Vera B., and Katz, S. H.: Encephalitis in diphtheria. Am. J. Dis. Child. **79:** 640-657, Apr. 1950.

(From Pathologic Laboratories, Willard Parker Hospital, New York.)

Five cases of inflammatory damage to the central nervous sytem in diphtheria are presented. Clinical neurologic manifestations were present in only one case.

Wichelhausen, Ruth H., and Brown, T. McP.: Tuberculous peritonitis treated with streptomycin. Am. J. Med. **8:** 421-444, Apr. 1950.

(From Department of Medicine, Veterans Administration Hospital, Washington.)

The results of treating 26 patients are reported. The immediate results were excellent in most cases but continued observations will be necessary to determine the efficacy of streptomycin in the ultimate control of the disease.

Klien, Bertha A.: The heredodegeneration of the macula lutea. Diagnostic and differential diagnostic considerations and a histopathologic report. Am. J. Ophth. **33:** 371-379, March 1950.

(From Department of Ophthalmology, Northwestern University Medical School, Chicago.)

The report presented here and some histopathologic reports in the literature show that the primary seat of the pathologic process is in the neuro-epithelium. Heredodegeneration of the macula, senile type, originally described by Haab, has to be differentiated from senile macular degeneration secondary to marked choroidal angiosclerosis.

Castagno, Marion MacDonald: The effect of the local use of homatropine hydrobromide on the normal angioscotoma. Am. J. Ophth. **33:** 367-370, March 1950.

(From Department of Ophthalmology, Long Island College of Medicine, and Long Island College Hospital, Brooklyn, N.Y.)

The use of a 2 percent solution of homatropine bromide instilled locally in the conjunctival sac in 11 eyes of 10 subjects apparently was associated with a measurable increase in the area of the angioscotoma studied. No consistent change in the blood pressure or pulse was noted during the period of study.

Moses, R. A., and Bruno, Mary: The rate of outflow of fluid from the eye under increased pressure. Am. J. Ophth. **33:** 389-397, March 1950.

(From Wilmer Ophthalmological Institute, Johns Hopkins University and Hospital, Baltimore.)

A method of measuring the outflow is described, giving the rates obtained in normal eyes, in normal eyes treated with drugs, and in glaucomatous eyes.

Arcilla, Angelina A.: Clinical evaluation of the silver stain for vaginal smears in the diagnosis of uterine cancer. Philippine J. Surg. **5:** 3-26, Jan.-Feb. 1950.

Vaginal smears from 484 patients were stained by a simple, rapid, and inexpensive method adapted from the silver carbonate technique of Del Rio-Hortega. Other smears from the same patients were stained according to the polychrome method of Papanicolaou. The results were evaluated.

Russell, Dorothy S.: The pathology of intracranial tumours. Postgrad. M. J. **26:** 109-125, March 1950.

(From Bernhard Baron Institute of Pathology, London Hospital.)

Revision of the account of the pathology first published in 1939.

Mayo, C. W., and Rice, Roberta G.: Anorectal anomalies. A statistical study of one hundred sixty-five cases with special reference to "distal-loop trouble." Surgery, **27:** 485-494, April 1950.

(From Mayo Foundation, Rochester, Minn.)

These cases were studied with special reference to sex incidence of the condition, the type of anomaly, the incidence of fistula formation, the incidence of associated congenital anomaly, the method of treatment, and the results of treatment. The authors emphasize the importance of early colostomy in the male with evidence of type III imperforate anus with rectourinary fistula; and the separation of the distal from the proximal loop of the colonic stoma in all cases in which colostomy is the preferred method of treatment.

Saldun de Rodriguez, Maria Luisa: Mauriac's syndrome. M. Woman's J. **57:** 13-21; 45-48; 50, April, 1950.

(From Profesora Ada. de Medicina Infantil, Institute de Clínica Pediátrica y de Puericultura "Dr. Luis Morquio," Montevideo.)

The syndrome is described in detail with report of 9 patients.

Lagrave de Perez Sanchez, Aida: Minimal coordinated program for the prevention of cancer. M. Woman's J. **57:** 31-32, April 1950.

(From Coordination of the Fight against Cancer, Ministry of Public Health, Montevideo, Uruguay.)

A minimal program is outlined.

Lincoln, Edith M., and Kirmse, T. W.: The diagnosis and treatment of tuberculous meningitis in children. Am. J. M. Sc. **219:** 382-393, April 1950.

(From Chest Clinic, Children's Medical Service, Bellevue Hospital, and Department of Pediatrics, New York University-Bellevue Medical Center.)

The authors report 18 cases of meningitis in which treatment with streptomycin has been completed and which are now being treated with promizole given orally. Thirteen children have survived from 9 to 27 months after the initial diagnosis. All are mentally normal. Addition of promizole to streptomycin seems to be of advantage in treatment.

Lubkin, Virginia: Photography of the red reflex. Arch. Ophth. **43:** 718-719, Apr. 1950.

A new technique is described which gives some remarkable results.

Lorenz, E., and Dunn, Thelma B.: Ocular lesions induced by acute exposure of the whole body of newborn mice to roentgen radiation. Arch. Ophth. **43:** 742-749, April 1950.

Of 24 male and 32 female mice of strain A given a single dose of 400 r to the whole body at birth, 17 males and 22 females were living 12 months later when the experiment was terminated. All showed lesions in one or both eyes, consisting of opacity of the lens, partial opacity, and vascularization of the cornea and atrophy of the retina.

Williams, H. L., Horton, B. T., and Day, Lois A.: Endolymphatic hydrops without vertigo; its differential diagnosis and treatment. Arch. Otolaryng. **51:** 557-581, April 1950.

(From Section on Otolaryngology and Rhinology, Division of Medicine, and Section on Gynecology and Obstetrics, Mayo Clinic, Rochester, Minn.)

The authors have studied a group of 32 cases in an attempt to separate from the larger group of cases of nerve (inner ear or perceptive) deafness a subgroup in which the hearing may be restored by treatment. They believe that the loss of hearing in this group is due to endolymphatic hydrops, which produces the classic symptoms of vertigo and nausea. They have indicated a method of treatment which has produced a certain measure of restoration of hearing.

Kossmann, C. E., Berger, A. R., Briller, S. A., Rader, Bertha, and Brumlik, J.: Anomalous atrioventricular excitation produced by catheterization of the normal human heart. Circulation **1**(pt.2): 902-909, April 1950.

(From Department of Medicine, New York University College of Medicine, and Adult Cardiac Clinic, Third (N.Y.U.), Medical Division, Bellevue Hospital, New York.)

During the withdrawal of a catheter-electrode through the right ventricle of 2 normal subjects the electrogram displayed briefly a short P-R interval and an aberrant QRS. In the simultaneously recorded standard lead, the phenomenon simulated what is seen in the Wolff-Parkinson-White syndrome. The findings are presented in support of the physiologic, rather than anatomic, explanation for anomalous atrioventricular excitation.

Crosse, V. Mary: Care of the new-born in general practice. M. Press, **223:** 331-335, April 12, 1950.

General discussion.

Durie, E. Beatrix, Lemberg, R., and Sear, H. R.: Chloroma. M. J. Australia, **1:** 397-401, March 25, 1950.

(From Kolling Institute, Royal North Shore Hospital, Sydney.)

The literature is briefly reviewed and a case is described. Some unusual radiological findings are discussed and also the nature of the green pigment.

Boucot, Katharine R., and Cooper, D. A.: A critical evaluation of mass roentgen surveys. J.A.M.A. **142:** 1255-1258, April 22, 1950.

(From Philadelphia Tuberculosis and Health Association and Division of Tuberculosis, Philadelphia Department of Health.)

The value of mass surveys even with bed shortage for tuberculous patients is discussed. Various other aspects of mass surveys are discussed.

Finkler, Rita S., and Becker, Sylvia F.: Functional thyroid disturbances in children. J. Newark Beth Israel Hosp. **1:** 118-134, April 1950.

Functional thyroid states in children are discussed with particular emphasis on recent advances in diagnosis and therapy.

L'Esperance, Elise S.: Detection and prevention of early cancer. M. Ann. District of Columbia, **19:** 183-190, 236, 1950.

(From Strang Cancer Prevention Clinics, New York Infirmary and Memorial Hospital Cancer Center, New York; Professor, Department of Preventive Medicine, Cornell University Medical College.)

The developments and results of periodic health examinations during the past 12 years are reviewed. These have shown that education of both the public and medical profession is the most important goal of the future. Detection of 1 percent of cancer in apparently normal individuals is important but even more so is the training of physicians in methods best suited to avoid full development of cancer. Even after the cause of cancer is discovered, periodic health examinations will remain the cornerstone on which control must rest.

Gottlieb, C., Chu, Florence, and Sharlin, H. S.: Perforation of a gastric ulcer associated with intracranial hemorrhage in a newborn infant. Radiology, **54:** 595-597, April 1950.

(From Department of Radiology, City Hospital, New York.)

The case is reported because of the rarity of perforation of gastric ulcer in the newborn, and because of its association with intracranial injury. It illustrates the importance of early roentgen diagnosis.

Rosenthal, T., Gold, E. M., Wallace, Helen M., et al.: Venereal disease in pregnancy. New York State J. Med. **50:** 989-991, April 15, 1950.

(From Department of Health of the City of New York.)

The results of examinations of more than 1000 pregnant women in three prenatal clinics in densely populated areas on a low economical level are described and compared with similar information for the general population of the city.

Brent, Florence: Addison's disease and pregnancy. Am. J. Surg. **79:** 645-652, May 1950.

(From Department of Obstetrics and Gynecology, Long Island College Hospital, Brooklyn, N.Y.)

Thirty-nine cases were reviewed and studied. A case which terminated fatally following Cesarean section is

reported in detail. Therapy is discussed with regard to results.

Brew, Mary F., and **Seidenberg, R.:** Psychotic reactions associated with pregnancy and childbirth. J. Nerv. & Ment. Dis. **111:** 408-423, May 1950.

(From Syracuse Psychopathic Hospital, and Department of Psychiatry, Syracuse College of Medicine.)

One hundred three cases of psychotic reactions associated with pregnancy and childbirth were investigated. Marked contrasts with previous studies were found in aspects of incidence, predilection, psychopathology, and treatment.

Schmideberg, Melitta: On recidivism. Am. J. Psychotherapy, **4:** 286-292, April 1950.

The problem of the habitual criminal is discussed with illustrative examples. Special emphasis is placed on the greater economy of constructive treatment rather than prison sentences.

Mayers, May R.: Occupational causes of cancer. Compensation Med. **3:** 11-17, March 1950.

(From Medical Unit Division of Industrial Hygiene and Safety Standards, New York State Department of Labor, and New York State Occupational Cancer Committee.)

The methods employed in the study of this problem are discussed and also the need for further information with regard to exposures and types of work in the various occupations. The limitations of existing records such as death certificates, etc. are noted.

Turner, Elizabeth K.: A case of congenital intrinsic obstruction of the duodenum with associated malrotation of the gut, successfully treated by operation. M. J. Australia, **1:** 369-371, March 18, 1950.

The case is reported of one baby of a pair of twins with congenital morbus cordis.

Wayne, Henriette Loewenberg: Sleep records in electroencephalography. New York Medicine, **6:** 16-19, 44-45, May 5, 1950.

(From EEG Laboratory, N. P. Service, U.S. Veterans Hospital, Bronx, New York.)

The value of sleep studies to the diagnostician are emphasized.

Greenberg, M., Siegel, M., and **Magee, M. Catherine:** Poliomyelitis in New York City, 1949. New York State J. Med. **50:** 1119-1123, May 1, 1950.

(From Bureau of Preventable Diseases, New York City Department of Health.)

An outbreak with a total of 2,446 cases and 179 deaths is reported. About 75 percent of the cases were in children under 15 years of age; including 45 percent spinal paralytic cases and 16 percent bulbar cases. The distribution varied in the 5 boroughs. Reports indicate that recent tonsillectomy appears to predispose to the development of poliomyelitis, and that exercise during the onset adversely affects its course.

Schmitt, F. O., and **Geren, Betty B.:** The fibrous structure of the nerve axon in relation to the localization of "neurotubules." J. Exper. Med. **91:** 499-504, May 1950.

In squid, frog, rat, and human nerves examined in thin sections with the electron microscope, the axon contains in addition to certain other particulates, characteristic filaments. These filaments are described. They differ unmistakably from the dense-edged fibrils called "neurotubules" which are clearly not axonic constituents. The present evidence offers no support for the view that "neurotubules" are structural entities of normal intact nerves.

Feuerlicht, Natalie: Recurrent anencephaly. J.A.M.A. **143:** 23, May 6, 1950.

A case of recurrent anencephaly is reported with discussion of incidence and complications.

Prouty, Margaret, and **Schafer, Etheldred L.:** Periarteritis nodosa associated with rat bite fever due to stretptobacillus moniliformis (erythema arthriticum epidemicum.) J. Pediat. **36:** 605-613, May 1950.

(From Departments of Pediatrics and Pathology, Jackson Clinic, Madison, Wis.)

This is the first case to be reported of rat bite fever coexisting with periarteritis nodosa. The literature is discussed with comments on the possible etiology of the periarteritis nodosa.

Milman, Doris H., and **Bakwin, H.:** Ossification of the metacarpal and metatarsal centers as a measure of maturation. J. Pediat. **36:** 617-620, May 1950.

(From Department of Pediatrics, College of Medicine, New York University-Bellevue Medical Center, New York.)

The ossification of certain metacarpal and metatarsal epiphyses is useful in assessing bone age between the ages of 1 and 5 years.

Lande, Lotte: Congenital malformations with severe damage to the central nervous system due to early fetal virus infection. J. Pediat. **36:** 625-634, May 1950.

Among 16 institutional patients with congenital malformations resembling the postrubella syndrome, a history of maternal rubella was found in 7. A severe common cold within the first three months of gestation was the likely causative factor in 5 cases and virus influenza in 1 case. Ocular defects and a variety of neurological signs found in these cases are described. The author states that in approximately 6 percent of institutionalized children with congenital malformations of heretofore unknown etiology early fetal virus infection may be the etiological factor.

Price, W. C., and **Frank, Mary E.:** Accidental acute dilantin poisoning. Report of a case with complete recovery in a nonepileptic child. J. Pediat. **36:** 652-655, May 1950.

(From Department of Pediatrics, University of Pittsburgh, and Children's Hospital of Pittsburgh, Pittsburgh, Pa.)

Case report.

Bakwin, Ruth Morris: The deaf child. J. Pediat. **36:** 668-682, May 1950.

(From Department of Pediatrics, College of Medicine, New York University-Bellevue Medical Center, and Department of Pediatrics, New York Infirmary.)

The incidence, etiology, mental functioning, personality, schooling, occupations, and care, with regard to the deaf child, are discussed.

Wheeler, W. E., Friedman, Valerie, and Saslaw, S.: Simultaneous nonfatal systemic histoplasmosis in two cousins. Am. J. Dis. Child. **79:** 806-819, May 1950.

(From Department of Pediatrics, Ohio State University College of Medicine, Children's Hospital, Columbus, Ohio, and Department of Bacteriology, Army Medical Department Research and Graduate School, Washington, D.C.)

The two cases reported are discussed in relation to other cases from the literature. These cases display a spectrum of severity of involvement. Treatment with antibiotics should be considered in the light of possible spontaneous remissions of the disease.

Tseng, Jessie C. S., Elghammer, H. W., and Ivy, A. C.: Urinary excretion of glucuronic and salicylic acids in normal and in rheumatic children. Am. J. Dis. Child. **79:** 826-837, May 1950.

(From La Rabida Jackson Park Sanitarium, Stritch School of Medicine of Loyola University and University of Illinois College of Medicine.)

The metabolism of glucuronic acid with and without the administration of acetylsalicylic acid, with or without sodium bicarbonate, is not specifically altered in patients with rheumatic fever to the extent that such alteration might be used for differential diagnosis.

Brownlee, W. M., Waters, Ethel M., and McClendon, S. J.: Paroxysmal supraventricular tachycardia in infancy. Review of treatment and report on an infant treated with methacholine (mecholyl) chloride. Am. J. Dis. Child. **79:** 838-845, May 1950.

Treatment is reviewed. In the case presented (10 week old infant) there was dramatic response to methacholine chloride when other methods had failed.

Williams, Marguerite L., and Kelsey, W. M.: Splenic panhematopenia in children. Am. J. Dis. Child. **79:** 862-867, May 1950.

(From Department of Pediatrics, Bowman Gray School of Medicine of Wake Forest College, and Pediatric Service, North Carolina Baptist Hospital.)

Two cases are described; one of the patients remained well for seventeen months after splenectomy.

Josselyn, Irene M.: Treatment of the emotionally immature child in an institution framework. Am. J. Orthopsychiat. **20:** 397-409, April 1950.

(From Herrick House, Bartlett, Illinois.)

The type of personnel necessary for such an institution is discussed among other factors. An illustrative case history is given.

Masters, W. H., and Magallon, Dorothy T.: The experimental production of irregular shedding of the endometrium. Am. J. Obst. & Gynec. **59:** 970-978, May 1950.

(From Division of Geriatrics and Department of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, Mo.)

Experimental procedures used to reproduce the phenomenon of irregular shedding of the endometrium in a group of women well past the menopause are described. The literature is reviewed.

La Salvia, Lucy A., and Steffen, Elizabeth A.: Delayed gastric emptying in labor. Am. J. Obst. & Gynec. **59:** 1075-1081, May 1950.

(From Obstetrical Service, Woman's Hospital of Philadelphia.)

This study shows that there is a definite delay in gastric emptying time in sedated women in labor. Recommendations for avoiding complications due to such delays are given.

Slater, Florence C.: The effect of vaginal pH on wound healing. Am. J. Obst. & Gynec. **59:** 1089-1094, May 1950.

(From Department of Gynecology, Woman's Medical College Hospital of Philadelphia.)

Three series of cases were reviewed; one using lactic-acid jelly instillations daily, one using aci-jel vaginal medication daily, and a control series. The results are discussed. A buffered acid jelly seems advantageous postoperatively in vaginal plastic operations.

Peters, Hannah: The prostatic smear. Cancer **3:** 481-487, May 1950.

(From University of Rochester School of Medicine and Dentistry, Rochester, New York.)

Various cell elements found in the prostatic smear obtained by direct massage are described. Cells found in the secretion of the benign prostate and the characteristics of cells desquamated from carcinoma of the prostate are discussed.

Evans, Mary: The indications for the induction of labour and the method of choice. M. Press, **223:** 422-425, May 3, 1950.

Medicinal and surgical methods are discussed.

Baud, Juliette: End results of radiotherapy of cancer of the tongue. Am. J. Roentgenol. **63:** 701-711, May 1950.

(From Curie Foundation, Paris.)

Radium needles placed in and around the tumor were used chiefly. The results were best in the group where the tumor arose either on the dorsum or lateral borders of the tongue. External irradiation by radium molds, telecurietherapy and roentgen therapy added to the radium puncture did not appreciably improve results. Block dissection of the neck, performed routinely since 1936 for lesions on the movable part of the tongue, was done in 362 cases. A number of these with metastatic lymph nodes were cured. The outcome depended on the location and extent of the cancer and the presence of metastatic lymph nodes increased the difficulty of treatment. Late recurrences were observed after six to twenty years. They were more frequently only local, sometimes in both the tongue and lymph nodes but never in the lymph nodes alone.

Wood, Constance A. P.: The technique and results of treatment of cancer of the tongue with a 10 gram radium beam unit. Am. J. Roentgenol. **63:** 727-738, May 1950.

(From Radiotherapeutic Research Unit, Medical Research Council, Hammersmith Hospital, London.)

The technique is described in detail. The results of treatment of 182 patients with a 10 gram radium beam unit are described and discussed.

Freeman, N. E., Miller, E. R., Stephens, H. B., and Olney, Mary B.: Retrograde arteriography in the diagnosis of cardiovascular lesions. II. Coarctation of the aorta. Ann. Int. Med. **32:** 827-841, May 1950.

(From Divisions of Surgery, Radiology, and Pediatrics, University of California School of Medicine, San Francisco.)

Retrograde arteriography was used in 15 patients in whom the diagnosis of coarctation of the aorta had been made on clinical findings. Injection was into the left common carotid artery in all cases. It was found that 70 percent diodrast gave the most satisfactory results, the examination being satisfactory in 13 of 15 cases. In one patient a hematoma developed in the wound. There were no other complications. In nine patients the exact location, degree, and extent of the stenosis were visualized. The findings were confirmed at operation.

Munoz Dones, Eloisa: Cretinism. Bol. Asoc. med. de Puerto Rico, **42:** 236-242, April 1950.

(From Pediatric Service, San Juan City Hospital, San Juan, P.R.)

Two cases were treated with desiccated thyroid. These were described with regard to diagnosis, dosage, and results. The earlier the treatment is started, the greater the chances of having a more normal development. However, the mental deterioration which occurs before therapy is instituted will not be altered.

Harris, T. N., Harris, Susanna, et al.: Streptococcal antihyaluronidase titers in the sera of patients with rheumatoid arthritis and glomerulonephritis. Ann. Int. Med. **32:** 917-922, May 1950.

(From Children's Hospital of Philadelphia,—Department of Pediatrics, School of Medicine, University of Pennsylvania—Children's Seashore House for Invalid Children, Atlantic City, N.J.; Philadelphia General Hospital; and Arthritis Section, Hospital of University of Pennsylvania.)

Antihyaluronidase and antistreptolysin titers in rheumatoid arthritis were found to be quite distinct from those in active rheumatic fever. The distribution of higher titers in glomerulonephritis was found to be fairly similar to those in rheumatic fever during the same year.

Czukrasz, Ida: Congenital entropion due to epiblepharon. Brit. J. Ophth. **34:** 318-319, May 1950.

(From University Eye Clinic, Debrecen, Hungary.)

A case is reported in a 7 year old boy of this rare malformation of the eyelid. Operation was successful. The deformity was caused by hypertrophy of the palpebral part of the orbicular muscle.

White, Rachel: Symposium on haemodynamics in pregnancy. II. Limb volumes in normal and toxaemic pregnancy. III. Blood volume in pregnancy. Edinburgh M. J. **57:** 10-14; 15-17, March 1950.

Preliminary experiments were made on 15 cases. From these the author concludes that an increase in volume of the upper and lower limbs, with or without clinical edema can occur during a pregnancy showing no other manifestation of toxemia. The increase in volume is less marked in the hand more frequently used. Clinical edema appears to coincide with an increase of 6 to 7 percent in the limb volume. The technique for measuring limb volume is described.

After describing the technique for determining blood volume and results of the preliminary tests, the author concludes that the increase in blood volume per square meter during pregnancy is approximately 23 percent; this increase occurs mainly during the second half of pregnancy and is maintained during the first week of the puerperium. The blood volume in cases of hypertension appears to be similar to that in normal pregnancy, while the blood volume in cases of toxemia appears to be slightly lower than normal.

BOOK NOTICES

(Editor's Note:—These reviews represent the individual opinions of the reviewers and not necessarily those of the members of the Editorial Board of the JOURNAL.)

A TEXT BOOK OF GYNECOLOGY. By Arthur Hale Curtis, M.D., Emeritus Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School; and John William Huffman, M.D., Associate Professor of Obstetrics and Gynecology, Northwestern University Medical School; Attending Gynecologist, Passavant Memorial Hospital, Chicago. 6th Edition. 799 pages with 466 illustrations, chiefly by Tom Jones, including 37 in color. Price, $10.00. Philadelphia and London, W. B. Saunders Company, 1950.

The sixth edition of this well known textbook represents the joint efforts of Dr. Curtis, Emeritus Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School, and of Dr. Huffman, Associate Professor of Obstetrics and Gynecology, Northwestern Medical School. This is the first time, since the book first appeared in 1930, that Dr. Curtis has had a collaborator in the preparation of his textbook. As is stated in the preface, with the withdrawal of the senior author from active participation in university duties, it appeared appropriate to share the responsibility for the revision of this edition with one more intimately in touch with academic activities in gynecology. Like the previous editions this is designed primarily as a textbook for students. The organization of the text has not been changed essentially. The major revisions appear in the chapters on Embryology and Urinary Tract Problems in Gynecology. The number of illustrations has been increased, and many of the old ones have been replaced with excellent photomicrographs or redrawings. Nomenclature and terminology have been standardized and modernized, though in many instances the content of the text has not.

Extensive revisions have been made in the chapter on Embryology. New schematic drawings with cross-section diagrams, which produce a three dimensional picture, have replaced a part of the legend as well as some of the old drawings. Some beautiful photomicrographs have been incorporated. Further, the text has been divided so that the development of both genital and urinary tracts may be followed through each of the three stages simultaneously, thus simplifying the material for the student less well grounded in embryology.

The authors have elaborated on the incidence and description of lesions of the urethra and placed all this material in one chapter entitled, "Urinary Tract Problems in Gynecology." New in this edition are the considerations of urethral diverticulae and abscesses arising in the para-urethral ducts as important problems often presented to the gynecologist. The senior author's interest in the mesonephric remnants found in the cervix in routine biopsies or associated with other lesions is evidenced by the appearance of a detailed description of this condition in the chapter on Lesions of the Cervix. Photomicrographs illustrate these embryonic rests which the authors state occur in the middle portion of the lateral cervical wall and are believed to give rise to adenomatous proliferations, cysts, and adenocarcinomas of the cervix. The clinical significance of these is not clear from the text, but their importance as incidental findings in pathology specimens is obvious. Other additions in this revised edition include the author's ideas regarding sarcomatous growth of the cervical stroma with sarcomatoid changes giving rise to tumors. This type of neoplasm has been called a chloroma, but in this book it is added as a separate tumor of the uterus, which is sarcomatous and develops diffusely and primarily in the cervical stroma from previously normal tissue.

Surprisingly little revision has been made on the subject of endocrinology, which is a disappointment considering the rapidly growing field and the especial need for the clinician to be familiar with the endocrine problems in gynecology. A little more stress on this phase of hormone uses and abuses in gynecology even in the stage of a student's education when he would turn to this book might some day render a clinician more able to evaluate the enormous claims of experimental work and more careful in his own use of these substances. There is, further, little evidence that either author has been affected by the currently increasing interest in psychosomatic aspects of disease, either in symptomatology or in treatment. This also is a disappointment, since it is generally recognized that these factors are particularly important in this field and that it is not unwise to awaken the future gynecologist's awareness early in his training. Nevertheless, though the outlines for diagnosis and treatment are somewhat didactic and brief, this book remains one of the foremost tests of gynecology for the medical student, with excellent descriptions of gross and microscopic anatomy and pathology.

—Jane Schaefer, M.D.

WORLD SURGERY: 1950. By Stephen A. Zieman, M.A., M.D., F.A.C.S., F.I.C.S., Abstract and News Editor, Journal of the International College of Surgeons, Abstractor for International Abstracts of Surgery, and Surgery, Gynecology and Obstetrics. Formerly Assistant Chief, Bureau of Publications, U. S. Navy Medical Department, and Assistant Editor, U. S. Navy Medical Bulletin. Price, $6.00. Pp. 177, with 53 illustrations. J. B. Lippincott Company, Philadelphia, 1950.

This volume is a survey of recent world literature in surgery, arranged by subject matter. As the editor explains, it puts forth the newer ideas, newer techniques, and newer claims for improvement and advancement in the theory and the practice of surgery. It contains many practical ideas and techniques which will be found useful in the surgeon's everyday practice. Its table of contents includes: Gastrointestinal Surgery, Cardiovascular-Respiratory Surgery, Gynecology, Obstetrics, Orthopedics, Genito-urinary Surgery, Neurosurgery and Psychosurgery, Ophthalmology and Otolaryngology, Head and Neck, and under Miscellaneous, the subheadings of Anesthesiology, Radiology, Preoperative and Postoperative Care, Blood Substitutes, and Antibiotics. The references are complete and handily arranged for the reader who desires to refer to the original articles. As intended, this book is a medium for disseminating surgical thought and practice and indicates what other surgeons throughout the world are thinking and doing.

—Ruth Fleming, M.D.

REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. Price, $2.00. J. B. Lippincott Company, Philadelphia. 1950.

This book is a compilation by the Council on Pharmacy and Chemistry of the AMA of reports

adopted and authorized for publication during 1949. In addition to evaluating a number of recent chemical agents applicable in medicine, it deals with a variety of other subjects of interest to the medical practitioner, such as charges for drugs, methods of clinical study, and evaluation of therapeutic agents in poliomyelitis, prescription writing, etc.

Under the heading "Cancer and the Need for Facts," the report discusses several so-called cancer remedies for whose misguided or deliberately fradulent claims there exists no authentic corroborative evidence, and whose use results in tragic delays which jeopardize the chances of saving the sufferer's life by more efficacious methods.

In an age when the physician is exposed to a steady barrage of circulars and advertisements containing endless unwarrented and unsubstantiated claims, the reports of the Council for Pharmacy and Chemistry of the AMA provide a valuable service for every medical man who wishes to sort out the useful chemical therapeutic agents from the myriads of useless and sometimes even harmful preparations showered upon him.

—Clement Nicory, M.D.

MEDICAL DIAGNOSIS: APPLIED PHYSICAL DIAGNOSIS. By Roscoe L. Pullen, M.D., F.A.C.P., Professor of Graduate Medicine, Director of the Division of Graduate Medicine, and Vice Dean of the School of Medicine, Tulane University of Louisiana; Senior Visiting Physician, Charity Hospital of Louisiana at New Orleans; 2d ed. 1119 pp., with 601 figures. Price $12.50. W. B. Saunders Company, Philadelphia and London, 1950.

With the aid of his contributors, Dr. Pullen has produced an excellent and comprehensive summary of current methods in medical diagnosis. Because of its completeness, the book will be of great value to those who already have had an introduction to physical diagnosis.

The editor has followed the usual organization of material in books of this type, starting with general chapters on the history and the physical examination, and then discussing in detail the diagnosis of diseases in the various regions of the body. There is an excellent chapter on oral diagnosis, a topic ordinarily more adequately covered in dental than in medical texts. An interesting chapter which has been added to the second edition is that on the bedside diagnosis of blood diseases, in line with the current concept of the blood as an organ. Of especial interest are the last three chapters on the examination of children, of aged persons, and of psychiatric patients. The sections on military medicine and on occupational medicine, which appeared in the first edition, have been omitted.

The volume is well illustrated and well printed. Because of the variety of contributors, the quality of the writing is somewhat uneven; but on the whole it is good. Although the book could have been shortened by omitting discussions of normal anatomy and of laboratory tests, this would have decreased the value of the book for students. Since some of the contributors appended short bibliographies to their chapters, it would seem that all should have done so.

This book should prove valuable to the students who have acquired the basic skills in diagnosis and to practicing physicians in all fields of medicine. It should be of greatest value to general practitioners who wish to perfect and to bring up to date their methods of medical diagnosis.

—Patricia Tudbury, M.D.

SAINTS, SINNERS AND PSYCHIATRY. By Camilla M. Anderson, M.D., Assistant Clinical Professor of Psychiatry, University of Utah. Price, $2.95. 206 pp. J. B. Lippincott Company, Philadelphia, London, Montreal. 1950.

In this psychiatric era it is refreshing to read this small volume. The author employs terminology which does not require a postgraduate course in psychiatry and the style of writing holds the reader's attention. The new theory formulated for the dynamics of human behavior is different from all others, although some details are similar. The author comments: "Some may tend to reject the theory because of the very fact of its simplicity and its familiarity." The reviewer would suggest reading the last chapter after the preface and again last, for it summarizes the concepts which are elaborated. This book should prove valuable to the average intelligent adult who desires a better understanding of his own, and his fellow man's behavior.

—Roberta F. Fenlon, M.D.

PHYSICIANS' HANDBOOK. By Marcus A. Krupp, M.D., Assistant Clinical Professor of Medicine, Stanford University School of Medicine; Director, Clinical Pathology, Veterans Administration, San Francisco; Norman J. Sweet, M.D., Assistant Professor of Medicine, University of California School of Medicine, San Francisco; Ernest Jawetz, Ph.D., M.D., Associate Professor of Bacteriology, University of California School of Medicine; and Charles D. Armstrong, M.D., Clinical Instructor of Medicine, Stanford University School of Medicine. Sixth edition. Price, $2.50. University Medical Publishers, 1950.

The Physicians' Handbook is of a convenient size, measuring 4 by 7 inches and two-thirds inch thick. It contains a great variety of indispensable data and is useful both as a refresher for the busy practicing physician and as a book of reference. It provides the medical man with descriptions of the many tests and techniques in common use, and a number of the more recent therapeutic methods.

Among the numerous topics with which the booklet deals are: An Outline for History Taking and Physical Examination; X-ray Examinations; Electrocardiography; Diets and Vitamins; Infant Feeding; Fluid and Electrolyte Balance; Oxygen; CO_2 and Helium Therapy; Electroencephalography; Biological Therapy; Poisons and Toxins; Parasitology; Mycology; Skin Tests; Epidemiology; Puncture Fluids Examination; Urinalysis and Renal Function Tests; Hematology and Blood Chemistry; Liver Function Tests; Examination of Secretions of the Gastrointestinal Tract; Tests of Endocrine Function; Bacteriologic Examinations; Serodiagnosis; Radio Isotopes; Pathological Examinations, etc. The book is strongly to be recommended as a desirable and useful component of the physician's handbag.

—Clement Nicory, M.D.

PROCTOLOGY IN GENERAL PRACTICE. By J. Peerman Nesselrod, B.S., M.S., M.Sc. (Med.), M.D., F.A.C.S., F.A.P.S., Associate in Surgery, Northwestern University Medical School; Associate of Surgical Division of Proctology, Evanston Hospital, Evanston, Ill. 276 pages with 64 figures. Price, $6.00. Philadelphia and London: W. B. Saunders Company, 1950.

Dr. Nesselrod's book is a valuable one for practitioners of medicine and of surgery. The first two chapters on the anatomy and physiology of the rec-

tum and on diagnostic procedures are clear and descriptive, and stress many of the fine points in technique which are often neglected. The next five chapters are devoted to the more common diseases of the rectum, with excellent differential diagnoses and methods of treatment. The author outlines the preoperative and postoperative care of rectal cases in general and discusses various types of anesthesia. The remaining chapters contain discussions of malformations, clinical proctoscopy, and neoplasms.

This is a good addition to a surgical library, as it gives practical and helpful suggestions for handling patients with rectal ailments.

—Margaret Stanley-Brown, M.D.

PRACTICE OF MEDICINE. By Jonathan Campbell Meakins, M.D., LL.D., D.Sc., formerly Professor of Medicine and Director of the Department of Medicine, McGill University; formerly Physician-in-Chief, Royal Victoria Hospital, Montreal; formerly Professor of Therapeutics and Clinical Medicine, University of Edinburgh. 5th edition. 1558 pp., 518 illustrations, including 50 in color. Price, $13.50. St. Louis, C. V. Mosby Company, 1950.

Writing or revising a single volume covering the modern practice of medicine in a rapidly changing world of specialized techniques is an exceedingly difficult task. However, in the fifth edition of this standard text the author reaches his goal. The essential facts of commonly encountered entities in general practice appropriately receive the greatest emphasis. In the opinion of the reviewer, this policy adds greatly to the value of the text.

The small section dealing with psychiatry has been replaced in the 1950 edition by an excellent chapter on psychosomatic medicine which could be read with profit by every student and practicing physician. The so-called "collagen" diseases have been given more attention; the chapters on metabolism and on the ductless glands have been enlarged and are up-to-date. Diseases of the circulatory system are particularly well covered. Here, the emphasis is again placed on symtomatology with a physiologic approach. Valuable tables summarizing the most important information are used to good effect in this section. Mycotic disease of the lung, hepatic diagnosis, and hepatitis are other subjects which receive special attention. The rapid advances in chemotherapy and the antibiotics are reflected in a special chapter devoted to the subject. While it is quite possible that this section may be out of date very quickly, it should still form an excellent outline for anyone reviewing the background of this shifting frontier of medicine.

—William G. Leaman, Jr., M.D.

WILLIAMS OBSTETRICS. By Nicholson J. Eastman, M.D., Professor of Obstetrics, Johns Hopkins University, and Obstetrician-in-Chief to the Johns Hopkins Hospital. New York, Appleton-Century-Crofts, Inc., 10th edition, 1950, 1132 pp., ill. $12.50.

The orientation chapters at the beginning of this book are not only helpful but extremely enlightening. The printed report from the State of Maryland is quite informative and the reader is of the opinion that the over-all mortality in the country would show a marked reduction if similar reports from all the states could be compiled and published.

One is most favorably impressed by the new grouping of the various subjects. This is indeed quite logical and gives one a much improved sequence of ideas. A vast collection of the very newest ideas in literature and technique in each phase are incorporated and many of the older ideas have been abandoned. The subject matter has ben well selected and refined.

The contents of this exceptionally fine book are sufficiently detailed to prove most useful for the student and will serve as a valuable reference book for the profession.

—Ann Gray Taylor, M.D.

SURGERY OF CATARACT. By Daniel B. Kirby, M.D., LL.D., Professor of Ophthalmology, College of Medicine, New York University; Attending Surgeon, Department of Ophthalmology, Bellevue Hospital, New York. 695 pp, with 330 illustrations, 21 in color. Price, $30.00. J. B. Lippincott Company, Philadelphia. 1950.

This is a monumental monograph in which the author covers completely the history of the operation for cataract from 3,000 years ago to the present time. It makes interesting reading from an historical viewpoint, even to one not particularly interested in the subject of cataracts. It includes descriptions of all the known operations for cataract performed over past centuries and takes up those devised and improved by the surgeons of the world during the last hundred years, giving credit to each. The bibliography is extensive. Quotations are recorded from the writings of all the reputable ophthalmic surgeons in the United States and abroad. Through test descriptions, drawings, and colored plates, operations of all types are depicted. The monograph is thus a comprehensive exposition of cataract surgery, giving details of all the various procedures for discusion, linear extracapsular and intracapsular extraction, etc., and evaluating them for the benefit of the student.

The volume is divided into five parts. It is well arranged and well indexed, so that it can be used as a handy reference by the busy practitioner, while for the student it is a complete text. Part I covers the early history of cataract surgery, the development of cataract extraction, general surgical principles, basic sciences, i.e., embryology, anatomy, pathology, physiology, etc. Part II gives details of preparation for cataract operation, discusses the anesthesia used, and evaluates the various methods and kinds. Part III covers present day cataract surgery, with descriptions of the operations employed by all the best ophthalmic surgeons, including exact details for the instruction of the student. Part IV is devoted to the correction of aphakia, which is as important to the patient as the removal of the cataract. Scientific knowledge of optics and accurate education in refraction are required to correct the vision in aphakia; unless it is done well the after results to the patient are far from satisfactory. The instruction here given is thorough and exact in detail. Part V covers the results of cataract surgery in both monocular and binocular extraction.

To repeat, the book is easily readable, profusely illustrated, handsomely produced, and a monument to the author's great labor and the vast amount of study and research required to produce it. One cannot but marvel at the energy of the author who has accomplished so great a task while at the same time teaching, lecturing, and carrying on the life of a busy ophthalmic surgeon.

—C. H. Connor, M.D., F.A.C.S.

An important announcement appears on Page 465

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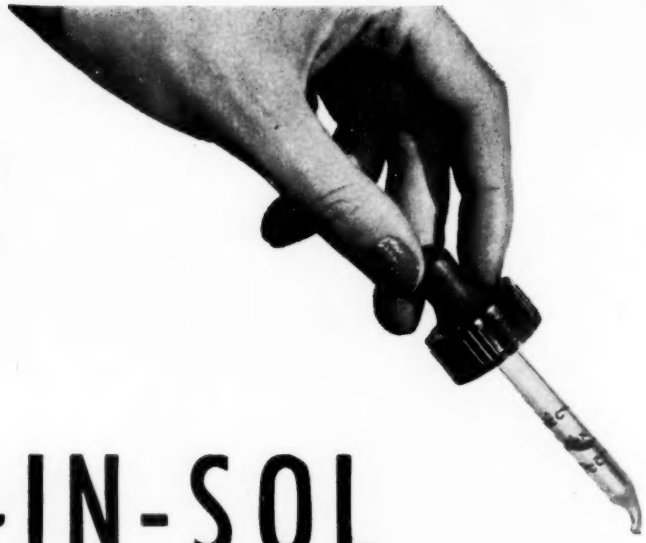
1. Walker, W.J.: Obesity as a Problem in Preventive Medicine, U.S. Armed Forces M.J. 1:393, 1950.

2. John, H.J.: Dietary Invalidism, Ann. Int. Med. 32:595, 1950.



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